



## **NLM<sup>®</sup> Training: PubMed<sup>®</sup>**

**MEDLARS Management Section  
U.S. National Library of Medicine<sup>®</sup>  
National Institutes of Health  
Department of Health and Human Services  
Bethesda, Maryland**

**February 2010 Revision**

## NOTES

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## **NLM Training: PubMed**

### **Agenda**

8:30 – 8:45	Welcome
8:45 – 9:00	Introduction to NLM and PubMed
9:00 – 9:15	What's in PubMed
9:15 – 10:15	Medical Subject Headings (MeSH)
10:15 – 10:30	BREAK
10:30 – 12:00	Building the Search (part I)
12:00 – 1:00	LUNCH
1:00 – 2:30	Building the Search (part II)
2:30 – 2:45	BREAK
2:45 – 3:15	Managing the Results
3:15 – 3:30	Saving the Search
3:30 – 3:45	Viewing the Articles
3:45 – 4:15	Additional Tools
4:15 – 4:45	Review Exercises
4:45 – 5:00	Closing

## **Goals and Objectives**

By the end of this course, you should be able to:

- Understand PubMed's scope and content.
- Understand how the MeSH vocabulary is used to describe and retrieve citations.
- Build a search using MeSH and PubMed search tools (Details, Limits, History, Search Builder, etc.)
- Manage your results using display, sort, the Clipboard, save, print, e-mail and order features.
- Save your search strategies.
- Customize your display (using My NCBI).
- Link to full-text articles and other resources.
- Use filters and special queries, and other PubMed/NCBI tools.

## Introduction to the U.S. National Library of Medicine

The United States National Library of Medicine (NLM), part of the National Institutes of Health (NIH), is the world's largest medical library. The collections of the National Library of Medicine include more than seven million books, journals, technical reports, manuscripts, microfilms, photographs, and images on medicine and related sciences, including some of the world's oldest and rarest works.

The screenshot shows the NLM website interface. Annotations with red arrows point to specific features:

- Click Training & Outreach for online and in-person training on NLM products and services:** Points to the 'Training & Outreach' link in the left sidebar.
- Click Network of Medical Libraries for information on local and regional resources:** Points to the 'Network of Medical Libraries' link in the left sidebar.
- Click List of NLM Databases and Resources for access to NLM:** Points to the 'List of NLM Databases and Resources' link in the top right.
- Click MedlinePlus for consumer health information:** Points to the 'MedlinePlus' link in the bottom right.



### The National Network of Libraries of Medicine®

Medical libraries throughout the United States are joined together in a network. The purpose of the National Network of Libraries of Medicine (NN/LM®) is to provide health science practitioners, investigators, educators, and administrators in the United States with timely, convenient access to biomedical and health care information resources.

- The network is administered by the National Library of Medicine.
- It consists of eight Regional Medical Libraries (major institutions under contract to NLM), more than 159 Resource Libraries (primarily at medical schools), and some 4,762 Primary Access Libraries (primarily at hospitals).
- The Regional Medical Libraries administer and coordinate services in the network's eight geographical regions.



NN/LM Web site: <http://nnlm.gov>

Toll free phone number: 1-800-338-7657

## Document Delivery

- **Loansome Doc**<sup>®</sup> offers full-text document ordering. This feature is part of PubMed and the NLM Gateway.
- **DOCLINE**<sup>®</sup> is the computerized interlibrary loan system that is the foundation for Loansome Doc.



More information on Loansome Doc and DOCLINE may be found on factsheets found at the NLM Web site:

**Loansome Doc** – [http://www.nlm.nih.gov/pubs/factsheets/loansome\\_doc.html](http://www.nlm.nih.gov/pubs/factsheets/loansome_doc.html)

**DOCLINE** - <http://www.nlm.nih.gov/pubs/factsheets/docline.html>

## NLM Technical Bulletin

- A bi-monthly newsletter published for NLM online searchers.
- The *NLM Technical Bulletin* keeps searchers apprised of:
  - changes and enhancements to NLM retrieval systems
  - changes to MeSH vocabulary
  - tips for searching
- The *Technical Bulletin* is published electronically on the NLM Web site. The URL is:

<http://www.nlm.nih.gov/pubs/techbull/tb.html>



Sign up for an **RSS** feed to be notified each time an article is published. Alternatively, click on **E-mail Sign up** to subscribe to the NLM mailing list to receive a weekly e-mail listing newly added items to the NLM web site. See details on Page 9.



## Consumer Information

- On October 22, 1998 NLM launched a consumer health Web page called **MedlinePlus**<sup>®</sup> (medlineplus.gov)
- Designed to direct consumers to resources containing information that will assist in researching their health questions.
- The pages are designed for educational use only and are not intended to replace advice from a health professional.
- These pages provide a carefully selected list of resources, not a comprehensive catalog.

Click on the **MedlinePlus** image on the right-hand side of the NLM home page:



A screenshot of the MedlinePlus website homepage. The header features the MedlinePlus logo with the tagline "Trusted Health Information for You" and identifies it as a service of the U.S. National Library of Medicine and the National Institutes of Health. A search bar is prominently displayed. The main content area is organized into several columns. The left column lists various resources like Health Topics, Drugs &amp; Supplements, Medical Encyclopedia, Dictionary, News, Directories, Go Local, and Other Resources. The middle column highlights Current Health News with links to articles on inhalers, diet, and uninsured adults, and a Featured Site about skin protection. The right column offers Interactive Tutorials, ClinicalTrials.gov, NIH SeniorHealth, and Surgery Videos. A sidebar on the bottom right contains links for What's New, Director's Comments, NIH MedlinePlus Magazine, and E-mail Updates and RSS. A small "español" button is located in the top right corner of the main content area.

## NLM Customer Service

Contact NLM if you need assistance or have questions about NLM's products or services.

E-mail

[custserv@nlm.nih.gov](mailto:custserv@nlm.nih.gov)

Toll-Free Phone

1-888-FINDNLM (1-888-346-3656)

On the NLM home page, Contact NLM on black bar:



You will be taken to this screen:

### Contact the National Library of Medicine

We can help you find health information resources. We cannot answer questions about your medical cases or give you specific medical advice because we are not physicians, nurses, or pharmacists.

Have you checked these sources?

- ☐ [Frequently Asked Questions \(FAQs\)](#)  
Someone may have already asked your question
- ☐ [NLM Fact Sheets](#)  
Information about NLM's programs, products and services

Subject of my comment/suggestion:

My comment or question (required):

Optional information:

My e-mail address (if you want reply):

First Name:

Last Name:

I am a:

U.S. State:

Country:

Make sure that [custserv@nlm.nih.gov](mailto:custserv@nlm.nih.gov) is on your spam filter "allowed senders" list.

If your browser does not work with forms, you can send an e-mail directly to [custserv@nlm.nih.gov](mailto:custserv@nlm.nih.gov)

☐ [NLM Customer Service Policy](#)

#### Phone Numbers

**(888) FIND-NLM**  
**(888) 346-3656**  
Local and international calls:  
**(301) 594-5983**  
FAX:  
**(301) 402-1384**  
Interlibrary Loan FAX:  
**(301) 496-2809**  
TDD access via Maryland Relay Service:  
**(800) 735-2258**

[Search for an NIH Staff Member](#)

#### Web Address

[www.nlm.nih.gov](http://www.nlm.nih.gov)

#### Mailing Address

[custserv@nlm.nih.gov](mailto:custserv@nlm.nih.gov)

Reference and Web Services  
National Library of Medicine  
8600 Rockville Pike  
Bethesda, MD 20894

For assistance with PubMed, you may also use the [Write to the Help Desk](#) link at the bottom of any PubMed screen.

## Subscribe to NLM-Announces Mailing List

This mailing list will alert you when new information has been added to the NLM Web site.  
For example:

- When articles have been added to the *NLM Technical Bulletin* Web site
- When the training manuals have been revised
- Other important NLM announcements and events

Go to <https://list.nih.gov/archives/nlm-announces.html>

Click on **Join or leave the list (or change settings)**

*or*

Click on **About the National Library of Medicine** from the NLM home page.

Click on **News and Events**.

Scroll down to **New on this Site**. Click on **Subscribe to the NLM-Announces mailing list**.

Click on **NLM-Announces**.

Click on **Join or leave the list (or change settings)**.

## NLM-ANNOUNCES

Join, Leave , or Change Options

---

This screen allows you to join or leave the NLM-ANNOUNCES list. To confirm your identity and prevent third parties from subscribing you to the list against your will, an e-mail message with a confirmation code will be sent to the address you specify in the form. Simply wait for this message to arrive, then follow the instructions to confirm the operation.

Alternatively, you can [login with your LISTSERV password](#) (if you have one) and update your subscription interactively, without e-mail confirmation.

Your e-mail address:

Your FULL name:

Subscription type:   ☒ Regular                      [NODIGEST]

*Fill in this  
information.*

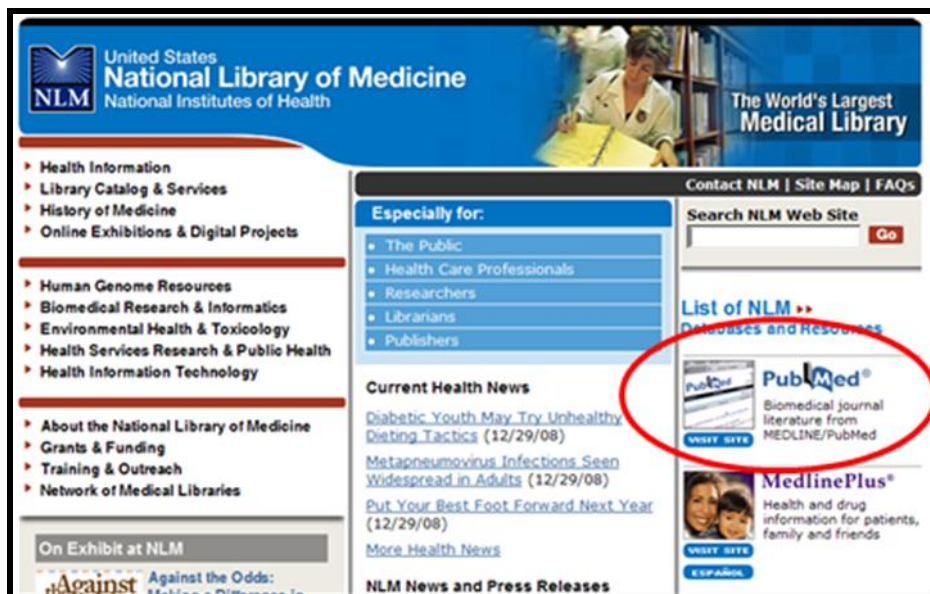
*Click Join  
the list  
button.*

**NOTES**



## Introduction to PubMed® (pubmed.gov)

- NLM has been indexing the biomedical literature since 1879, to help provide health professionals access to information necessary for research, health care, and education.
- What was once a printed index to articles, the *Index Medicus*, became a database now known as MEDLINE®. MEDLINE contains journal citations and abstracts for biomedical literature from around the world.
- Since 1996, free access to MEDLINE has been available to the public online via PubMed



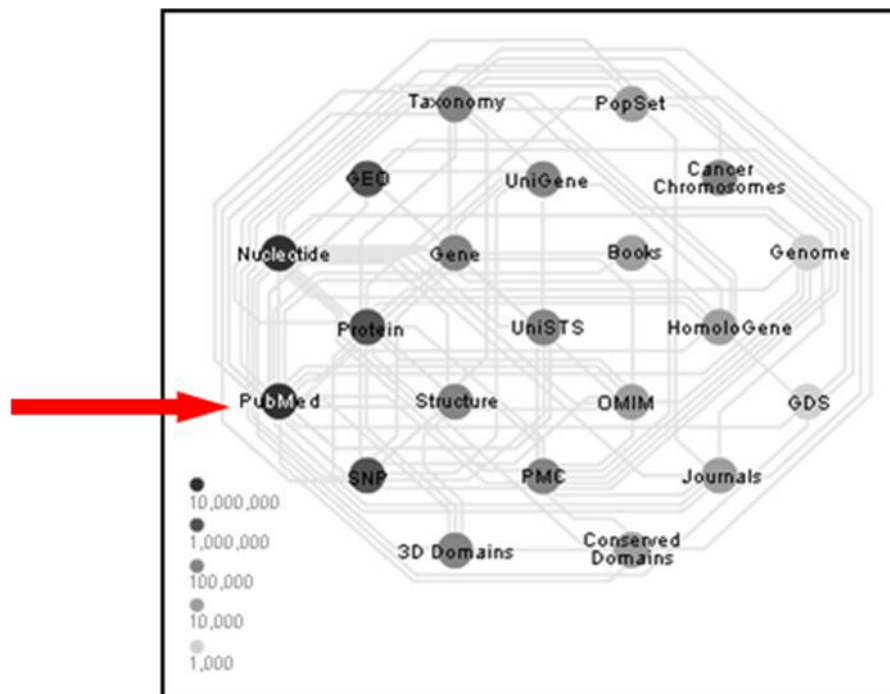
*Click here.*

Figure 1: NLM Home Page <http://www.nlm.nih.gov>

- PubMed is a database developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM) available on the Web.
- PubMed is one of several databases under NCBI's Entrez retrieval system.
- PubMed currently includes over 19 million bibliographic citations.
- PubMed also has links to the full-text of articles at participating publishers' Web sites, as well as biological data, sequence data, and more from other Entrez Databases and from third parties.

## Interrelationships between Entrez Databases

- PubMed provides links to the integrated molecular biology databases maintained by NCBI. These databases contain: DNA and protein sequences, genome mapping data, and 3-D protein structures, aligned sequences from populations, and the Online Mendelian Inheritance in Man (OMIM). Links between MEDLINE records and sequence records make it easy to find MEDLINE abstracts associated with sequence records and vice versa.
- PubMed also provides links to chemical information in PubChem Substance, PubChem Compound and PubChem Bioassay databases.
- The following diagram illustrates the relationships between some of the information resources in Entrez:



See an interactive view of Entrez links at <http://www.ncbi.nlm.nih.gov/Database/>

## What's in PubMed

- Most PubMed records are MEDLINE citations.
- Other records include those in different stages of processing (including records provided directly from the journal publisher) but destined to be MEDLINE citations.
- A relatively small number of records that are included in PubMed but not selected for MEDLINE.

## MEDLINE Citations

PubMed provides access to **MEDLINE**, the National Library of Medicine's premier bibliographic database containing citations and author abstracts from approximately 5,400 biomedical journals published in the United States and in other countries.

The scope of MEDLINE includes such diverse topics as microbiology, delivery of health care, nutrition, pharmacology and environmental health. The categories covered in MEDLINE include everything from anatomy, organisms, diseases, psychiatry, and psychology to the physical sciences.

- MEDLINE currently contains over 17 million references dating back to 1948.
- New material is added Tuesday through Saturday.
- Coverage is worldwide, but most records (about 90%) are from English-language sources or have English abstracts.
- Approximately 79% of the citations are included with the published abstract.

## MEDLINE Journal Selection

- The Literature Selection Technical Review Committee (LSTRC) meets three times a year and considers approximately 140 titles for MEDLINE at each meeting.
- Final approval is made by the Director of the National Library of Medicine.
- Titles are considered for scope and coverage, quality of content, quality of editorial work, production quality, audience, and type of content.
- For more details, see the NLM Fact Sheet, MEDLINE Journal Selection, at <http://www.nlm.nih.gov/pubs/factsheets/jsel.html>.

## **MEDLINE® – Basic Bibliographic Citation**

One MEDLINE citation represents one journal article and is composed of fields that provide specific information (Title, Author, Language, etc.) about the journal article. The following information is generally provided:

- Title of the journal article
- Names of the Authors
- Abstract published with the article
- Controlled Vocabulary search terms (Medical Subject Headings)
- Journal Source Information
- First Author Affiliation
- Language in which the article was published
- Publication Type (description of the type of article, e.g., Review, Letter, etc.)

A sample MEDLINE citation from PubMed follows.



## PubMed MEDLINE citation

[Curr Top Dev Biol](#), 2006;76:103-27.

### Wnt signaling: a key regulator of bone mass.

[Baron R](#), [Rawadi G](#), [Roman-Roman S](#).

[Yale University School of Medicine New Haven, Connecticut 06520, USA.](#)

The identification of a link between bone mass in humans and gain- [high bone mass (HBM) trait] or loss-of-function [osteoporosis pseudoglioma (OPPG) syndrome] mutations in the Wnt coreceptor lipoprotein receptor-related protein (LRP)5 or in the Wnt antagonist sclerostin (sclerosteosis, Van Buchem syndrome) has called the attention of academic and industry scientists and clinicians to the importance of this signaling pathway in skeletal biology and disease. Multiple genetic and pharmacological manipulations of Wnt signaling in mice have since then confirmed the central role of this pathway in both the establishment of peak bone mass and its maintenance throughout life. Wnt signaling appears to be located downstream of bone morphogenetic proteins (BMPs), itself induced by Hedgehog (Hh) signaling, suggesting that it is the successive recruitment of these three intracellular signaling cascades that allow the full expression of the genetic patterns that characterize the osteoblast, the cell responsible for the formation of bone.

PMD: 17118265 [PubMed - indexed for MEDLINE]

 Publication Types, MeSH Terms, Substances

#### Publication Types:

[Review](#)

#### MeSH Terms:

[Animals](#)  
[Bone Density](#)  
[Bone Remodeling](#)  
[Bone and Bones/anatomy & histology\\*](#)  
[Bone and Bones/drug effects](#)  
[Bone and Bones/metabolism\\*](#)  
[Humans](#)  
[LDL-Receptor Related Proteins/chemistry](#)  
[LDL-Receptor Related Proteins/genetics](#)  
[LDL-Receptor Related Proteins/metabolism](#)  
[Mice](#)  
[Models, Biological](#)  
[Mutation](#)  
[Osteoblasts/metabolism](#)  
[Osteogenesis](#)  
[Signal Transduction/drug effects](#)  
[Wnt Proteins/antagonists & inhibitors](#)  
[Wnt Proteins/genetics](#)  
[Wnt Proteins/metabolism\\*](#)  
[beta Catenin/metabolism](#)

#### Substances:

[LDL-Receptor Related Proteins](#)  
[LRP6 protein, human](#)  
[Wnt Proteins](#)  
[beta Catenin](#)  
[lipoprotein receptor related protein 5](#)

## How Citations Get Into PubMed

- Records are either supplied electronically by publishers or created using scanning and Optical Character Recognition (OCR) at NLM.
- Citations are immediately made available via PubMed. All citations go through a quality control process, and citations from MEDLINE journals are indexed.
- All citations display a status tag, which indicates their stage of processing. See the Summary table on page 21.

## Publisher Supplied Citations

- These are citations that are supplied electronically by publishers directly to PubMed. The citations are then forwarded to NLM's Index Section to be processed. (Not all citations are supplied electronically).
- Citations received electronically have the status tag: **[PubMed - as supplied by publisher]**.

**Sample PubMed citation that was submitted electronically but processing has not yet begun:**

[A powder formulation of measles vaccine for aerosol delivery.](#)  
LiCalsi C, Maniaci MJ, Christensen T, Phillips E, Ward GH, Witham C.  
Vaccine. 2001 Mar 21;19(17-19):2629-36.  
PMID: 11257402 [PubMed - as supplied by publisher]  
[Related articles](#)

Notice the **[PubMed – as supplied by publisher]** status tag.

## In Process

- These citations are being reviewed for inclusion in MEDLINE and, if in scope, subsequently are indexed with MeSH<sup>®</sup> vocabulary. In addition the bibliographic data in these records is being checked for accuracy.
- In process records carry the status tag: **[PubMed – in process]**.
- In process records are added to PubMed Tuesday-Saturday.

**Sample In Process citation in PubMed:**

[A powder formulation of measles vaccine for aerosol delivery.](#)  
LiCalsi C, Maniaci MJ, Christensen T, Phillips E, Ward GH, Witham C.  
Vaccine. 2001 Mar 21;19(17-19):2629-36.  
PMID: 11257402 [PubMed - in process]  
[Related articles](#)

Notice the **[PubMed – in process]** status tag.

## MEDLINE Citations

- After Medical Subject Headings (NLM's controlled vocabulary terms) and other indexing terms are added, the in process citations graduate to MEDLINE records. These "completed" records have also been checked for bibliographic accuracy.
- Fully indexed MEDLINE records carry the status tag **[PubMed – indexed for MEDLINE]**.
- MEDLINE records are added to PubMed Tuesday-Saturday.

### Sample MEDLINE citation in PubMed:

[A powder formulation of measles vaccine for aerosol delivery.](#)  
LiCalsi C, Maniaci MJ, Christensen T, Phillips E, Ward GH, Witham C.  
Vaccine. 2001 Mar 21;19(17-19):2629-36.  
PMID: 11257402 [PubMed - indexed for MEDLINE]  
[Related articles](#)

*Notice the [PubMed – indexed for MEDLINE] status tag.*

## OLDMEDLINE Citations

- About 1.8 million citations (most with no abstracts) are to journal article citations from two printed indexes: *Cumulated Index Medicus (CIM)* and the *Current List of Medical Literature (CLML)* published from 1948 to 1965. To search PubMed for all citations originating from the OLDMEDLINE print index conversion project, use `jsubsetom`.
- The citations are from international biomedical journals covering the fields of medicine, preclinical sciences, and allied health sciences.
- OLDMEDLINE citations have been created using standards that are different from the data entry standards for MEDLINE records. There are also variations among OLDMEDLINE citations in the data fields present as well as in their format, depending on the original source from which the citations were obtained.
- Beginning in 2005, the original subject terms applied to the citations in the printed indexes are being mapped to current Medical Subject Headings (MeSH).
- OLDMEDLINE records carry the status tag [**PubMed – OLDMEDLINE**] until *all* original subject terms are mapped to current MeSH. Once all terms are mapped, the records are promoted to status [**PubMed – indexed for MEDLINE**].

### Sample OLDMEDLINE citations in PubMed:

[New clinical concept of systemic lupus erythematosus. Analysis of 100 cases.](#)  
RUPE CE, NICKEL SN.  
J Am Med Assoc. 1959 Oct 24;171:1055-61. No abstract available.  
PMID: 14440208 [PubMed - OLDMEDLINE]  
[Related articles](#)

[SYSTEMIC LUPUS ERYTHEMATOSUS.](#)  
OTTO WJ.  
JAMA. 1965 Sep 20;193:1049. No abstract available.  
PMID: 14338807 [PubMed - indexed for MEDLINE]  
[Related articles](#)

## Non-MeSH Indexed Citations

- Some citations received electronically from publishers never become MEDLINE citations.
- These records are not indexed with MeSH terms.
- These records have either the status tag **[PubMed]** or **[PubMed – as supplied by publisher]** and remain in PubMed but are not MEDLINE citations.

**There are three sources of these types of records:**

### 1. Out-of-scope articles from selectively indexed MEDLINE journals

This may occur when a particular article in a selectively indexed journal is out-of-scope for MEDLINE (such as a geology article in a general scientific journal like *Science* or *Nature*). These citations have been reviewed for accurate bibliographic data. The status tag **[PubMed]** appears on these citations.

**Sample citation for an article that is out of scope for MEDLINE:**

[Intraslab earthquakes: dehydration of the Cascadia slab.](#)  
Preston LA, Creager KC, Crosson RS, Brocher TM, Trehu AM.  
*Science*. 2003 Nov 14;302(5648):1197-200.  
PMID: 14615535 [PubMed]  
[Related articles](#) [Free article](#)

Notice the **[PubMed]** status tag.

**Sample citation for an article from the same journal issue that is indexed for MEDLINE:**

[CLIP identifies Nova-regulated RNA networks in the brain.](#)  
Ule J, Jensen KB, Ruggiu M, Mele A, Ule A, Darnell RB.  
*Science*. 2003 Nov 14;302(5648):1212-5.  
PMID: 14615540 [PubMed - indexed for MEDLINE]  
[Related articles](#) [Free article](#)

Notice the **[PubMed – indexed for MEDLINE]** status tag.

### 2. Articles from issues of journals published prior to selection for MEDLINE indexing

These earlier citations will not be indexed with MeSH headings.

- Prior to late 2003:
  - ▶ the citations were *not* reviewed for accurate bibliographic data
  - ▶ the status tag of **[PubMed – as supplied by publisher]** appears
- Beginning in late 2003:
  - ▶ the citations have been reviewed for accurate bibliographic data
  - ▶ the status tag of **[PubMed]** appears.

**Example:** NLM began indexing the journal, *The Neurologist* with v. 9, no. 1, 2003. However, the publisher electronically supplied NLM with citations from earlier volumes. The citations from back volumes were entered into PubMed but will not be indexed with MeSH.

Notice the [PubMed] status tag from an item from vol. 8, 2002.

[Evaluation and management of the driver with dementia.](#)  
Dobbs BM, Carr DB, Morris JC.  
Neurologist. 2002 Mar;8(2):61-70.  
PMID: 12803692 [PubMed]  
[Related Articles](#)

[Restoring function after spinal cord injury.](#)  
Becker D, Sadowsky CL, McDonald JW.  
Neurologist. 2003 Jan;9(1):1-15. Review.  
PMID: 12801427 [PubMed - indexed for MEDLINE]  
[Related Articles](#)

Notice the [PubMed - indexed for MEDLINE] status tag on an item from volume 9, 2003.



Indexing information for a particular journal can be found in the “Indexed In” field in the NLM Catalog. Use PubMed’s Journals Database to link to this information.

### 3. Articles from non-MEDLINE journals

- Beginning in July 2005:
  - ▶ the citations have been reviewed for accurate bibliographic data
  - ▶ the status tag of [PubMed] appears

[Surgical management of abdominal and retroperitoneal Castleman's disease.](#)  
Bucher P, Chassot G, Zufferey G, Ris F, Huber O, Morel P.  
World J Surg Oncol. 2005 Jun 7;3:33.  
PMID: 15941478 [PubMed]  
[Related articles](#) [Free article](#)

- Author manuscripts in PubMed Central (PMC) that would not normally be in PubMed.

[Size Controlled Synthesis of Monodispersed, Core/Shell Nanogels.](#)  
Blackburn WH, Lyon LA.  
Colloid Polym Sci. 2008;286(5):563-569.  
PMID: 18769603 [PubMed]  
[Related articles](#) [Free article](#)



See next page for a Citation Status Tags Summary Table.

## PubMed Citation Status Tags Summary Table

Citation Status Tag Value	Condition(s)	MeSH-indexed?	Bibliographic data checked?	How to search
<b>PubMed - as supplied by publisher</b>				
	<ul style="list-style-type: none"> <li>Citations supplied electronically when first received.</li> <li>Citations from issues of journals published before journal selected for MEDLINE indexing (records received prior to late 2003).</li> <li>Citations from non-MEDLINE journals (records received prior to June 2005).</li> </ul>	No	No	publisher [sb] NOT pubstatusnihms NOT pubstatuspmcsd
<b>PubMed - in process</b>				
	<ul style="list-style-type: none"> <li>Citations in review for inclusion in MEDLINE.</li> </ul>	No	No	in process [sb]
<b>PubMed - indexed for MEDLINE</b>				
	<ul style="list-style-type: none"> <li>Fully indexed citations.</li> </ul>	Yes	Yes	medline [sb]
<b>PubMed - OLDMEDLINE</b>				
	<ul style="list-style-type: none"> <li>Citations originally printed in hardcopy indexes published from 1948 through 1965 that have not had all of their original subject terms mapped to current MeSH.</li> </ul>	Partial	Yes	oldmedline [sb]
<b>PubMed</b>				
	<ul style="list-style-type: none"> <li>Out-of-scope articles from selectively indexed MEDLINE journals.</li> <li>Since late 2003, citations from issues of journals published prior to selection for MEDLINE indexing.</li> <li>Since June 2005, citations from non-MEDLINE journals.</li> <li>Citations for articles with full-text in PubMed Central (PMC) that would not normally be in PubMed.</li> </ul>	No	Yes	pubmednotmedline [sb] OR (pubstatusnihms OR pubstatuspmcsd AND publisher [sb])

**NOTES**



## Medical Subject Headings (MeSH<sup>®</sup> Vocabulary)



For a video introduction to MeSH, see *Branching Out: The MeSH Vocabulary* at <http://www.nlm.nih.gov/bsd/disted/video/>

### What is MeSH?

- Acronym for Medical Subject Headings
- Similar to key words on other systems
- Used for indexing journal articles for MEDLINE and also used for cataloging books and audiovisuals
- Used by searchers
- Revised annually
- Gives uniformity and consistency to the indexing of the biomedical literature and is a distinctive feature of MEDLINE

### MeSH Vocabulary includes four types of terms:

- Headings
- Publication Types
- Subheadings
- Supplementary Concept Records

### MeSH Headings

- MeSH headings represent concepts found in the biomedical literature
- MeSH headings and Publication Types are arranged in a hierarchical manner called the MeSH Tree Structure

### Examples of MeSH Headings:

- |                             |                     |
|-----------------------------|---------------------|
| • Body Weight               | • Self Medication   |
| • Kidney                    | • Radioactive Waste |
| • Dental Cavity Preparation | • Brain Edema       |

---

## MeSH Tree Structure

- MeSH vocabulary is organized by 16 main branches:
  - A. Anatomy
  - B. Organisms
  - C. Diseases
  - D. Chemical and Drugs
  - E. Analytical, Diagnostic and Therapeutic Techniques and Equipment
  - F. Psychiatry and Psychology
  - G. Phenomena and Processes
  - H. Disciplines and Occupations
  - I. Anthropology, Education, Sociology and Social Phenomena
  - J. Technology, Industry, Agriculture
  - K. Humanities
  - L. Information Science
  - M. Named Groups
  - N. Health Care
  - V. Publication Characteristics
  - Z. Geographic Locations
- Each Descriptor has a tree number that positions the term in the hierarchy.

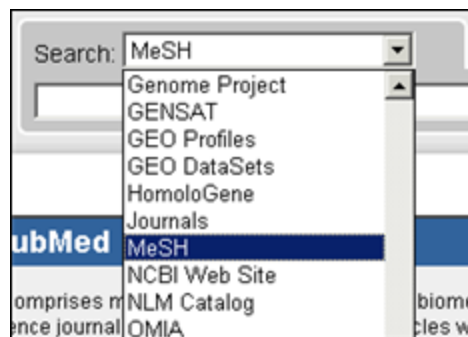
Eye [A01.456.505.420]  
    Eyebrows [A01.456.505.420.338]  
    Eyelids [A01.456.505.420.504]  
        Eyelashes [A01.456.505.420.504.421]

- Some terms have multiple tree numbers because they appear in more than one place in the hierarchy.
- By having narrower terms indented under broader terms, a search of a broad term can automatically include the narrower terms. This is known as an EXPLODE.

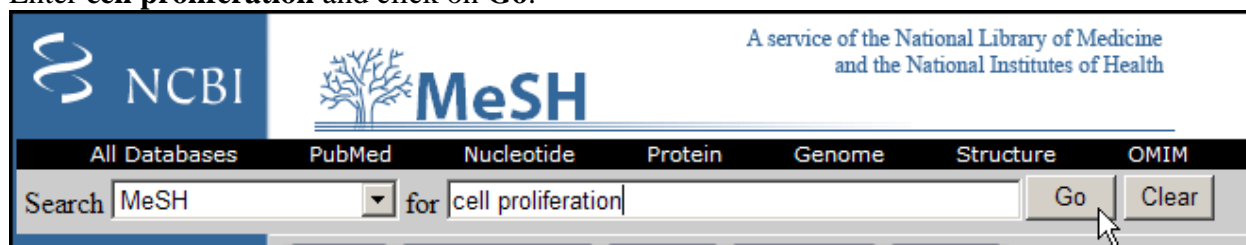
## MeSH Database

- MeSH is the name of an Entrez database that assists PubMed users in locating appropriate terms for searches. This database provides information about MeSH terms including:
  - Definitions
  - Synonyms for the concept
  - Related terms
  - The position of the headings in the MeSH hierarchy
- We can use the MeSH database to look at the type of information associated with each MeSH term:

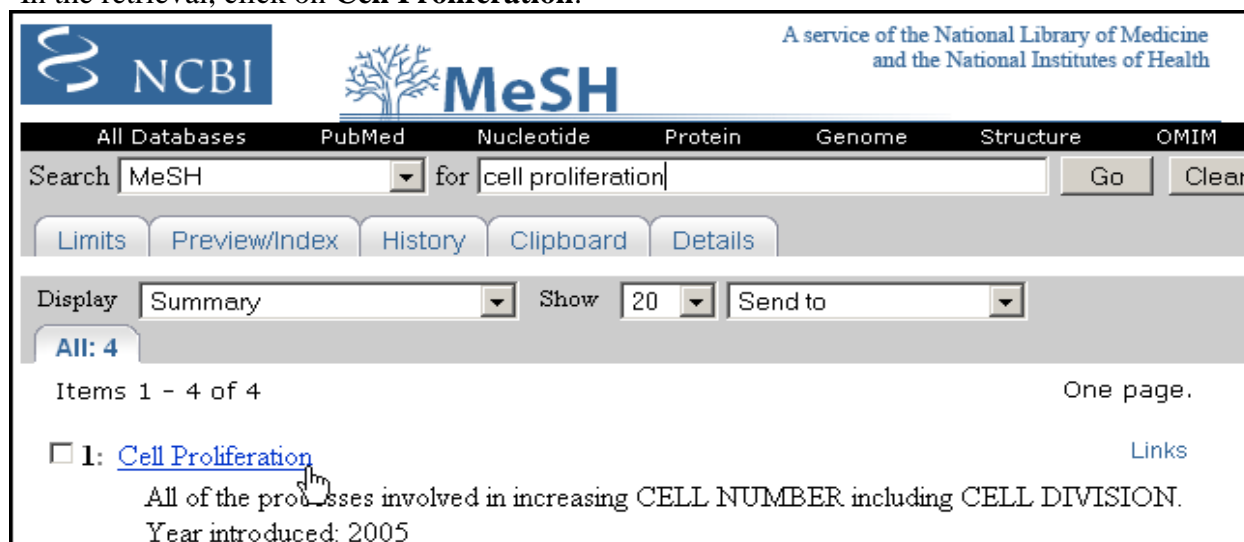
Click on **MeSH Database** on the homepage or select **MeSH** from the database selection box and click **Search**:



Enter **cell proliferation** and click on **Go**:



In the retrieval, click on **Cell Proliferation**:



This displays the full record for **Cell Proliferation**:

[Links](#)

## Cell Proliferation

All of the processes involved in increasing CELL NUMBER including CELL DIVISION.

Year introduced: 2005 MeSH Term, definition, and year (searchable by earliest year)

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ drug effects ☐ ethics ☐ radiation effects Select subheadings.

☐ Restrict Search to Major Topic headings only.

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree). Major topic & Do Not Explode.

Entry Terms:

- Proliferation, Cell
- Cellular Proliferation
- Proliferation, Cellular
- Cell Multiplication
- Multiplication, Cell
- Cell Growth in Number
- Cell Number Growth
- Growth, Cell Number
- Number Growth, Cell

"Synonyms" for this term.

Previous Indexing:

- [Cell Division \(1966-2004\)](#) Before 2004 ...

See Also:

- [Hyperplasia](#) Related term(s) of interest.

All MeSH Categories

Phenomena and Processes Category

Cell Physiological Phenomena

Cell Physiological Processes

Cell Growth Processes

**Cell Proliferation**

Cell Division

←

This term has been placed in 2 branches.

←

All MeSH Categories

Phenomena and Processes Category

Physiological Phenomena

Physiological Processes

Growth and Development

Growth

Cell Growth Processes

**Cell Proliferation**

Cell Division

Position of this term in the MeSH hierarchy.

Use the Links menu to go to the **NLM MeSH Browser** for additional information:

**Cell Proliferation**  
 All of the processes involved in increasing CELL NUMBER including CELL DIVISION  
 Year introduced: 2005  
  
Subheadings: This list includes those paired at least once with this heading in MEDLINE  
 current rules for allowable combinations.  
  
☐ drug effects   ☐ ethics   ☐ radiation effects

**Links**  
 ▶ PubMed  
 ▶ PubMed - Major Topic  
 ▶ Clinical Queries  
 ▶ **NLM MeSH Browser**

The **NLM MeSH Browser** is the tool used by MEDLINE indexers and catalogers.

National Library of Medicine - Medical Subject Headings	
2010 MeSH	
MeSH Descriptor Data	
<a href="#">Return to Entry Page</a>	
Standard View. <a href="#">Go to Concept View</a> ; <a href="#">Go to Expanded Concept View</a>	
MeSH Heading	Cell Proliferation
Tree Number	<a href="#">G04.299.233.750</a>
Tree Number	<a href="#">G07.700.320.249.410.750</a>
Scope Note	All of the processes involved in increasing <a href="#">CELL NUMBER</a> including <a href="#">CELL DIVISION</a> .
Entry Term	Cell Growth in Number
Entry Term	Cell Multiplication
Entry Term	Cell Number Growth
Entry Term	Cellular Proliferation
See Also	<a href="#">Hyperplasia</a>
Allowable Qualifiers	<a href="#">DE</a> <a href="#">ES</a> <a href="#">RE</a>
Previous Indexing	<a href="#">Cell Division</a> (1966-2004)
History Note	2005
Date of Entry	20040707
Unique ID	D049109

## Indexing with MeSH Headings

- NLM's MEDLINE indexers examine articles and assign the most specific MeSH heading(s) appropriate to describe the main concepts discussed.
- When there is no single specific MeSH heading for a concept, the indexer will use the closest, more general MeSH heading available.
- The indexer will assign as many MeSH headings as appropriate to cover the topics of the article (generally 5 to 15).
- The MeSH terms that reflect the major points of the article are marked with an asterisk (\*) by indexers.
- Information the indexer provides includes:
  - topic of article
  - age group of population studied
  - human vs. animal studies
  - male vs. female studies
  - type of article (e.g., review article)

**Article Title:**

Hormone therapy in perimenopausal and postmenopausal women: examining the evidence on cardiovascular disease risks.

**Abstract:**

Women may live for 30 years or longer after menopause with cardiovascular disease as their highest mortality risk. Menopause may correspond to health alterations for women, yet the use of estrogen during and after this transition has been controversial for the past four decades. The evidence from recent scientific studies does not support the use of hormone therapy for the prevention or treatment of cardiovascular disease, which has resulted in its removal from national guideline recommendations. However, because of concerns related to specific aspects of the research, there are gaps in the evidence. Studies are under way to evaluate alternate methods for hormone delivery, low-dose hormone therapy, and selective estrogen receptor modulators (SERMs) in reducing cardiovascular risks in perimenopausal and postmenopausal women. Implications for clinical nursing practice include education as well as assessment and counseling related to individual risk factors.

**Publication Types:**

Review

**MeSH Terms:**

Aged  
Cardiovascular Diseases/chemically induced\*  
Estrogen Replacement Therapy/adverse effects\*  
Evidence-Based Medicine  
Female  
Humans  
Middle Aged  
Perimenopause\*  
Postmenopause\*  
Risk Factors

## Subheadings

- Subheadings further describe a particular aspect of a MeSH heading.

The entire list of subheadings follows:

Abnormalities	ab	Isolation & purification	ip
Administration & dosage	ad	Legislation & jurisprudence	lj
Adverse effects	ae	Manpower	ma
Agonists	ag	Metabolism	me
Analogs & derivatives	aa	Methods	my
Analysis	an	Microbiology	mi
Anatomy & histology	ah	Mortality	mo
Antagonists & inhibitors	ai	Nursing	nu
Biosynthesis	bi	Organization & administration	og
Blood	bl	Parasitology	ps
Blood supply	bs	Pathogenicity	py
Cerebrospinal fluid	cf	Pathology	pa
Chemical synthesis	cs	Pharmacokinetics	pk
Chemically induced	ci	Pharmacology	pd
Chemistry	ch	Physiology	ph
Classification	cl	Physiopathology	pp
Complications	co	Poisoning	po
Congenital	cn	Prevention & control	pc
Contraindications	ct	Psychology	px
Cytology	cy	Radiation effects	re
Deficiency	df	Radiography	ra
Diagnosis	di	Radionuclide imaging	ri
Diagnostic use	du	Radiotherapy	rt
Diet therapy	dh	Rehabilitation	rh
Drug effects	de	Secondary	sc
Drug therapy	dt	Secretion	se
Economics	ec	Standards	st
Education	ed	Statistics & numerical data	sn
Embryology	em	Supply & distribution	sd
Enzymology	en	Surgery	su
Epidemiology	ep	Therapeutic use	tu
Ethics	es	Therapy	th
Ethnology	eh	Toxicity	to
Etiology	et	Transmission	tm
Genetics	ge	Transplantation	tr
Growth & development	gd	Trends	td
History	hi	Ultrasonography	us
Immunology	im	Ultrastructure	ul
Injuries	in	Urine	ur
Innervation	ir	Utilization	ut
Instrumentation	is	Veterinary	ve
		Virology	vi

## Subheading Groupings

- Related subheadings have been grouped to allow for additional, relevant retrieval.
- Not all subheadings have been placed in these groupings – some do not logically fit.

### **Families of Subheading Explosions**

<b>adverse effects</b>	<b>etiology</b>	<b>physiology</b>
poisoning	chemically induced	genetics
toxicity	complications	growth & development
	secondary	immunology
<b>analysis</b>	congenital	metabolism
blood	embryology	biosynthesis
cerebrospinal fluid	genetics	blood
isolation & purification	immunology	cerebrospinal fluid
urine	microbiology	deficiency
	virology	enzymology
<b>anatomy &amp; histology</b>	parasitology	pharmacokinetics
blood supply	transmission	urine
cytology		physiopathology
pathology	<b>metabolism</b>	secretion
ultrastructure	biosynthesis	
embryology	blood	<b>statistics &amp; numerical data</b>
abnormalities	cerebrospinal fluid	epidemiology
innervation	deficiency	ethnology
	enzymology	mortality
<b>chemistry</b>	pharmacokinetics	supply & distribution
agonists	urine	utilization
analogs & derivatives		
antagonists & inhibitors	<b>microbiology</b>	<b>surgery</b>
chemical synthesis	virology	transplantation
<b>complications</b>	<b>organization &amp; admin</b>	<b>therapeutic use</b>
secondary	economics	administration & dosage
	legislation & jurisprudence	adverse effects
<b>cytology</b>	manpower	contraindications
pathology	standards	poisoning
ultrastructure	supply & distribution	
	trends	<b>therapy</b>
<b>diagnosis</b>	utilization	diet therapy
pathology		drug therapy
radiography	<b>pharmacology</b>	nursing
radionuclide imaging	administration & dosage	prevention & control
ultrasonography	adverse effects	radiotherapy
	poisoning	rehabilitation
<b>embryology</b>	toxicity	surgery
abnormalities	agonists	transplantation
	antagonists & inhibitors	
<b>epidemiology</b>	contraindications	
ethnology	diagnostic use	
mortality	pharmacokinetics	



## Pharmacologic Action Terms

Every drug and chemical MeSH heading has been assigned one or more headings that describe known pharmacological actions (PA).

- Since 1996, NLM indexers add the appropriate pharmacological action MeSH heading as well as the specific chemical MeSH heading to a citation when the action of the chemical is discussed in the article.

### Example:

*The pharmacological actions established for the MeSH Heading, **Aspirin**:*

Pharmacological Action	Anti-Inflammatory Agents, Non-Steroidal
Pharmacological Action	Cyclooxygenase Inhibitors
Pharmacological Action	Fibrinolytic Agents
Pharmacological Action	Platelet Aggregation Inhibitors

- A citation to an article that discusses **aspirin used as an anti-inflammatory agent** will be assigned:

Aspirin  
Anti-Inflammatory Agents, Non-Steroidal

- A citation to an article that discusses **aspirin used to inhibit blood clotting** will be assigned:

Aspirin  
Platelet Aggregation Inhibitors

See “The Basics of MeSH in MEDLINE/PubMed” (<http://www.nlm.nih.gov/bsd/disted/mesh/>), linked from Tutorials on the PubMed home page for information on searching with pharmacologic action terms.

## Other Types of MeSH Vocabulary

### Supplementary Concepts

- Over 180,000 terms.
- Display in RN field on MEDLINE record.

<b>cordycepin [Substance Name]</b>	<a href="#">Links</a>
Date introduced: August 1, 1989	
Registry Number: 73-03-0	
Heading Mapped to:	
<ul style="list-style-type: none"><li>• <a href="#">Deoxyadenosines</a></li></ul>	
Entry Terms:	
<ul style="list-style-type: none"><li>• 3'-deoxyadenosine</li></ul>	
Previous Indexing:	
<ul style="list-style-type: none"><li>• <a href="#">DEOXYADENOSINE (1975-1989)</a></li></ul>	
Pharmacologic Action:	
<ul style="list-style-type: none"><li>• <a href="#">Antifungal Agents</a></li><li>• <a href="#">Antineoplastic Agents</a></li><li>• <a href="#">Mutagens</a></li></ul>	

### The data in a Supplemental Concept MeSH Database record may include:

- Name of substance: For example: cordycepin
- Date Introduced: The date the record was added to the vocabulary
- Registry Number: For example: 73-03-0. A unique number assigned to chemicals by the Chemical Abstract Service, or a code for enzymes assigned by the Commission on Biological Nomenclature. May display as zero (0), generally for terms for a group or class of compounds.
- Heading Mapped to: The MeSH term used for indexing this chemical in MEDLINE
- Entry Term: Synonyms that can be used for searching this concept
- Previous Indexing: MeSH terms used before the current term became available
- Pharmacologic Action: An action of a drug or chemical as reported in the literature, e.g., Antifungal Agents or Antineoplastic Agents

## Age Group MeSH Headings

These are MeSH headings which indicate the age of human subjects discussed in the article:

Infant, Newborn	Birth to 1 month
Infant	1 to 23 months
Child, Preschool	2 to 5 years
Child	6 to 12 years
Adolescent	13 to 18 years
Young Adult	19 to 24 years
Adult	19 to 44 years
Middle aged	45 to 64 years
Aged	65 to 79 years
80 and over	80+

## Publication Types

- Publication Types describe the type of material being indexed.
- The most common type is Journal Article. Other Publication Types include:

Clinical Trial  
Retraction of Publication  
Comment  
Review

Practice Guideline  
Twin Study  
Retracted Publication

- Publication Types may be searched in the MeSH Database. Definitions are provided.
- They are part of the MeSH hierarchy (V category).

**NOTES**

## Practice Exercises – Introduction to MeSH

Use the **MeSH Database** to find the answers to these questions:

1. If you search the term “phytotherapy” in PubMed, what terms are you also searching?
2. How far back can you search with the MeSH term, “Proteomics?”
3. What ages are included by the term, “Child?”
4. What is the preferred MeSH term for “chewing?”

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Suggested Answers – Introduction to MeSH

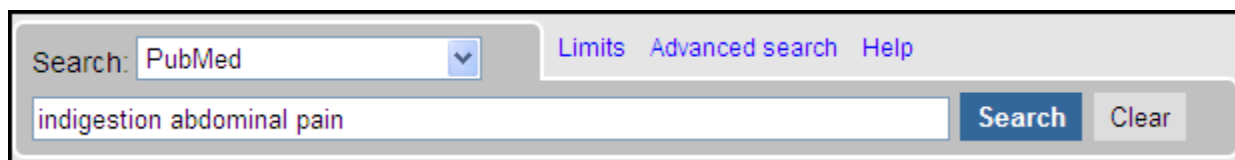
Use the MeSH Database to find the answers to these questions:

1. If you search the term “phytotherapy” in PubMed, what terms are you also searching?  
Aromatherapy and Eclecticism, Historical
2. How far back can you search with the MeSH term, “Proteomics?”  
To 2003. For 2000-2002, use Proteome.
3. What ages are included by the term, “Child?”  
6 to 12 years.
4. What is the preferred MeSH term for “chewing?”  
Mastication.

## Building the Search

### Basic Searching

**Search:** *Find citations to articles about indigestion and abdominal pain.*



The screenshot shows the PubMed search interface. At the top, there is a search box with the text "indigestion abdominal pain". To the left of the search box is a dropdown menu labeled "Search:" with "PubMed" selected. To the right of the search box are three links: "Limits", "Advanced search", and "Help". Below the search box are two buttons: "Search" and "Clear".

#### Entering Search Terms

- Enter significant terms in the search box (e.g., *indigestion abdominal pain*).
- Click on the **Search** button.
- Scroll down to **Search details** to check PubMed's translation (more about this later in the workbook)
- Use the **Clear** button to erase the contents of the search box.

## Search Results Screen

Once you click on **Search** or press the Enter key, PubMed will automatically:

- Run the search
- Retrieve and display citations (results displayed in last in, first out order)
- Provide the option to Save Search via My NCBI feature and an option to save the search to an RSS feed

Results screen returned by PubMed for *indigestion abdominal pain* search. More about results will be covered in the **Managing the Results** section beginning on page 97.

Active search box displaying current search

Modifiable Display settings and Send to: options

Citations are displayed in Summary format

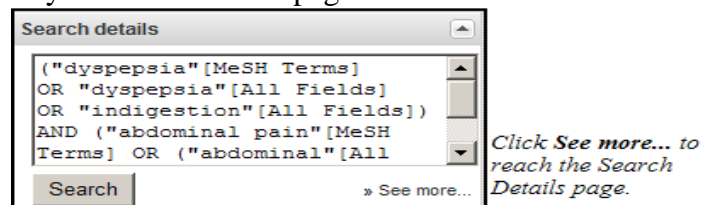
The screenshot shows the PubMed.gov search results page. At the top, there's a navigation bar with 'NCBI', 'Resources', and 'How To'. The search bar contains 'indigestion abdominal pain' and a 'Search' button. Below the search bar, there are links for 'RSS', 'Save search', 'Limits', 'Advanced search', and 'Help'. The results are displayed in 'Summary' format, sorted by 'Recently Added'. The first three results are listed, each with a checkbox, a title, authors, journal information, and PMID. The first result is 'Spleen cystic echinococcosis: clinical manifestations and treatment.' by Culafić DM, Kerkez MD, Mijac DD, Lekić NS, Ranković VI, Lekić DD, Dordević ZL. The second result is 'A case of desmoplastic small round cell tumor diagnosed in a young female patient.' by Kim JW, Park JH, Cho HJ, Kwon JH, Koh Y, Kim SJ, Kim SH, Lee SH, Im SA, Kim YT, Kim WH. The third result is 'Test-and-treat strategy for Helicobacter pylori (HP) infection in older patients.' by Rotolo G, Dominguez LJ, Sarakatsianou V, Mangiaracina D, Figlioli F, Barbagallo M. On the right side, there are filters for 'Filter your results:' showing 'All (858)', 'Review (160)', and 'Free Full Text (150)'. Below that, there's a section 'Titles with your search terms' with two entries: 'Abdominal pain, indigestion, anorexia, nausea and v [Baillieres Clin Gastroenterol. 1988]' and '[Abdominal pain, indigestion and eosinophilia] [Rev Med Suisse. 2006]'. At the bottom right, there's a section '60 free full-text articles in PubMed Central' with three entries: 'A case of desmoplastic small round cell tumor diagnosed in a young f [Cancer Res Treat. 2009]', 'A prospective, randomized, double-blind, placebo-controlled pa [BMC Gastroenterol. 2009]', and 'Comparison of factors associated with atypical symptoms in younger a [J Korean Med Sci. 2009]'. The page number 'Page 1' is visible in the center.



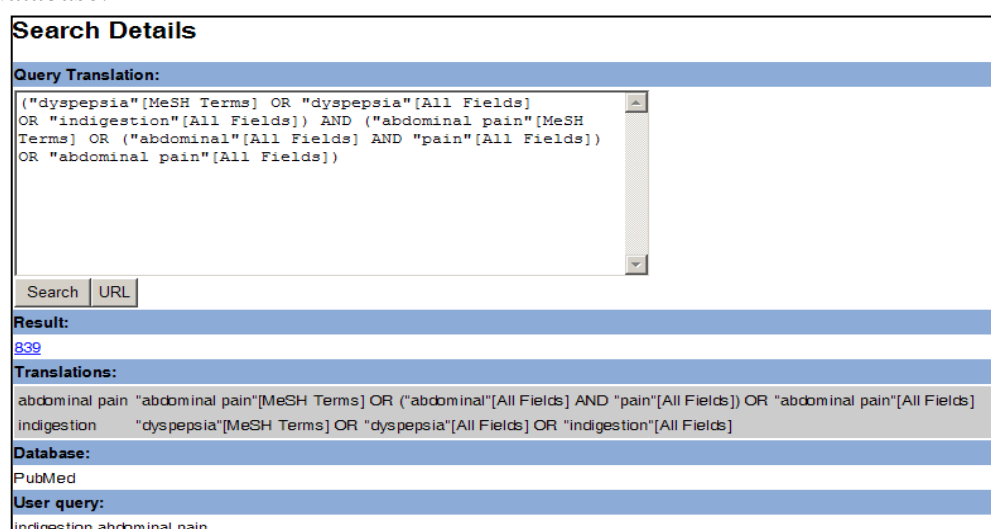
## Automatic Term Mapping (ATM)

### Details screen

You can see how PubMed processes your search by viewing Search details from the right column of your search results page:



The Search Details page shows how your terms are translated or *mapped* to terms indexed in the database.



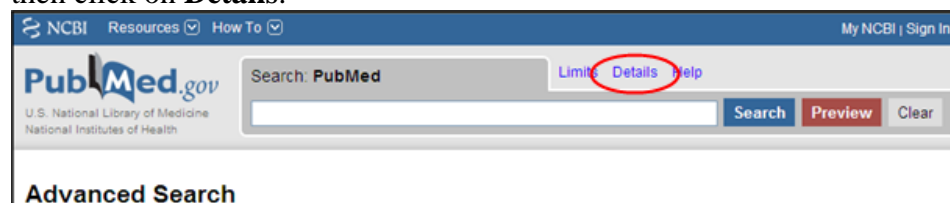
See page 59 for explanation of Boolean logical operators (AND, OR)

*Translations are shown in the grey box towards the bottom of the screen.*

### From Advanced Search screen:



A link to the Details screen is also available from the Advanced Search screen. Click on Advanced Search, adjacent to the search box buttons, then click on **Details**:



**Terms entered in the search box without a search tag, e.g., [au] are matched against:**

- Subjects, using the
  - MeSH (Medical Subject Headings) Translation Table
- Journals, using the
  - Journals Translation Table
- Authors and Investigators, using the
  - Full Author Translation Table
  - Author Index
  - Full Investigator Translation Table
  - Investigator Index

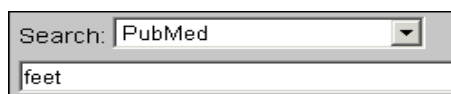
**1. MeSH Translation Table** contains:

- MeSH Headings
- Subheadings
- Publication Types
- Entry Term mappings (also known as synonyms) for MeSH terms
- Mappings derived from the Unified Medical Language System (UMLS)
- Supplementary Concepts and synonyms to the Supplementary Concepts

If a match is found in this translation table:

- the term will be mapped to the appropriate MeSH term and searched as MeSH
- the searcher's term and the mapped MeSH term will be searched in All Fields

**Example:**



**PubMed's Translation:**

""foot"[MeSH Terms] OR "foot"[All Fields] OR "feet"[All Fields]

- Feet is an Entry Term for the MeSH term, Foot.



When a term is searched as a MeSH Heading, PubMed automatically searches that heading and the more specific headings underneath in the hierarchy. This is called exploding a term.

For example, when searched as a MeSH Term, PubMed will search the heading Foot as well as the more specific term(s) in the hierarchy:



Matching phrases are searched in All Fields as a phrase and broken into individual words, with the exception of phrases mapping to Supplementary Concepts (substances) or MeSH Headings that include a standalone number or single character. These are searched only as phrases in All Fields.

**Example:**

Search: PubMed
muscle atrophy

**PubMed's Translation:**

"muscular atrophy"[MeSH Terms] OR ("muscular"[All Fields] AND "atrophy"[All Fields]) OR "muscular atrophy"[All Fields] OR ("muscle"[All Fields] AND "atrophy"[All Fields]) OR "muscle atrophy"[All Fields]

**Example:**

Search: PubMed
protein c

**PubMed's Translation:**

"protein c"[MeSH Terms] OR "protein c"[All Fields]

**2. Journals Translation Table** contains:

- Full journal title
- MEDLINE abbreviation
- International Standard Serial Number (ISSN)

**Example:**

Search: PubMed
the journal of cell biology

**PubMed Translation:**

"J Cell Biol"[Journal] OR "the journal of cell biology"[All Fields]



If a name of a journal also happens to be a MeSH term or a one-word title, PubMed will search the term as a MeSH heading and in All Fields. For example, the search for *Science* untagged will search: "science"[MeSH Terms] OR "science"[All Fields]. To limit your search to a journal title, use the Limits page or use the tag [ta], e.g., science [ta]

**3. Full Author Translation Table** includes:

- Full author names for articles published from **2002 forward and to journals that publish using the full names of authors.**
- Full author searching can be entered in natural or inverted order:

julia s wong  
wong julia s

- When searching a full name using the inverted order, a comma following the last name is generally optional, omit periods after initials, and put all suffixes, e.g., Jr, at the end. For example, to search for the author Bruce J. Herron, you may use any of the following formats:

herron, bruce j  
herron bruce j  
bruce j herron

- For some names, however, it is necessary to distinguish which name is the last name by using the comma following the last name:

ryan, james  
james, ryan

- Full author name searching allows for automatic truncation of the forename. If you don't know the middle initial, enter only the last and first names:

herron bruce

#### 4. Author Index

- Author's names, for all years of publication, are included in the form of Last Name (space) Initials. Use this format for searching.

**Examples:** *o'brien jm*  
*adams sh*  
*pogonka t*

- If only the first initial is used, PubMed automatically truncates the author's name to account for varying initials.

**Example:**



This search retrieves citations to articles written by o'brien j, o'brien ja, o'brien jz, etc.



If only an author's last name is entered, PubMed will search that name in All Fields (Author field plus all other searchable fields). It will not default to the Author Index because the last name is not followed by an initial. When the last name is the same as a MeSH term, PubMed will search the term in MeSH as well as in All Fields. To limit a search to an author's name, use Limits or use the tag [au], e.g., o'brien [au].

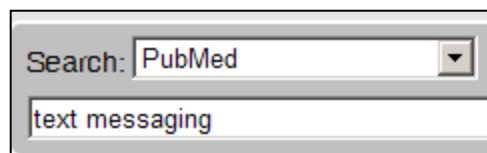
#### 5. Full Investigator Translation Table and Investigator Index

- Investigators are individuals who contributed to the research, but may not have participated in writing the article.
- The names in the Full Investigator Translation Table and the Investigator Index are formatted and searchable in the same way as the Full Author Name Table and Author Index (see above).

### If no match is found?

- PubMed breaks apart the phrase and repeats the automatic term mapping process until a match is found.
- Terms that don't make a match will be searched in "All Fields." Individual terms will be combined (ANDed) together.

Example:



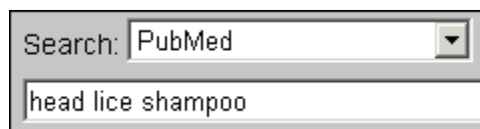
Search: PubMed  
text messaging

### PubMed Translation:

text[All Fields] AND messaging[All Fields]

- PubMed breaks apart a long phrase from right to left:

Example:



Search: PubMed  
head lice shampoo

<u>Searches for:</u>	<u>Results:</u>	<u>Action:</u>
head lice shampoo	No match found	Removes term on right to re-run Automatic Term Mapping process.
head lice	Match found in MeSH Translation Table	<i>head lice</i> will be searched as <i>"pediculus"[MeSH Terms] OR "pediculus"[All Fields] OR ("head"[All Fields] AND "lice"[All Fields]) OR "head lice"[All Fields]</i>
shampoo	No match found in Translation Tables	<i>shampoo</i> will be searched as <i>shampoo[All Fields]</i>

### PubMed then combines (ANDs) the terms to produce a single search strategy:

"pediculus"[MeSH Terms] OR "pediculus"[All Fields] OR ("head"[All Fields] AND "lice"[All Fields]) OR "head lice"[All Fields]

AND

shampoo[All Fields]

**NOTES**

## Practice Exercises: Basic Search and ATM

1. Find references about shingles and facial paralysis. To what MeSH Heading does shingles map? (Hint: View **Search details** from the search results screen. Click **See more...** for a full page view.)
2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed?

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Suggested Answers: Basic Search and ATM

1. Find references about shingles and facial paralysis. To what MeSH Heading does *shingles* map? (Hint: View **Search details** from the search results screen. Click **See more...** for a full page view.)

Enter shingles facial paralysis in the search box, click **Search**. View Search details from the Search Results screen and click **See more...** to see that the term shingles maps to the MeSH heading **Herpes Zoster**.

Query Translation:

("herpes zoster"[MeSH Terms] OR ("herpes"[All Fields] AND "zoster"[All Fields]) OR "herpes zoster"[All Fields] OR "shingles"[All Fields]) AND ("facial paralysis"[MeSH Terms] OR ("facial"[All Fields] AND "paralysis"[All Fields]) OR "facial paralysis"[All Fields])

Search

URL

Result:

454

Translations:

facial paralysis	"facial paralysis"[MeSH Terms] OR ("facial"[All Fields] AND "paralysis"[All Fields]) OR "facial paralysis"[All Fields]
shingles	"herpes zoster"[MeSH Terms] OR ("herpes"[All Fields] AND "zoster"[All Fields]) OR "herpes zoster"[All Fields] OR "shingles"[All Fields]

Database:

PubMed

User query:

shingles facial paralysis



2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed?

Enter hypertension nosebleed in the search box and click **Search**. View Search details.

**Details:**

**Query Translation:**

```
("hypertension"[MeSH Terms] OR "hypertension"[All Fields])  
AND ("epistaxis"[MeSH Terms] OR "epistaxis"[All Fields]  
OR "nosebleed"[All Fields])
```

**Result:**

[189](#)

**Translations:**

```
hypertension "hypertension"[MeSH Terms] OR "hypertension"[All Fields]  
nosebleed  "epistaxis"[MeSH Terms] OR "epistaxis"[All Fields] OR "nosebleed"[All Fields]
```

**Database:**

PubMed

**User query:**

hypertension nosebleed

The term, nosebleed, maps to the MeSH heading, **epistaxis**.

## Related Articles

- Citations in PubMed have a **Related Articles** link. Clicking on this link will access the citations in PubMed that are most closely related to the original citation.

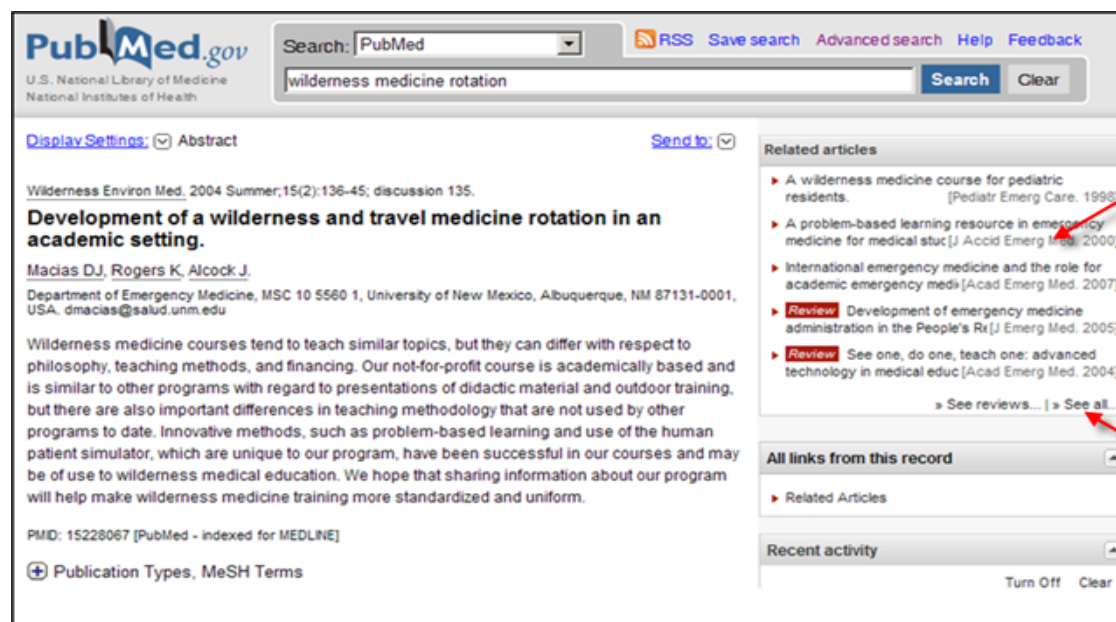


- To create this list of Related Articles PubMed compares words from the Title and Abstract of each citation, as well as the MeSH headings assigned, using a powerful word-weighted algorithm.
- The Related Articles citations display is in rank order from most to least relevant. The citation you linked from is displayed first.



A detailed explanation of the Related Articles algorithm is available in the PubMed **Help** (Search Related Articles; then click on “Finding articles related to a citation”; then click on the “algorithm” link.)

**Example:** Find citations to articles about a wilderness medicine rotation.



The first five Related Articles and Reviews are displayed in the Abstract format when viewing a single record.

Click here to display the complete set of related articles.

The Abstract display of a single record

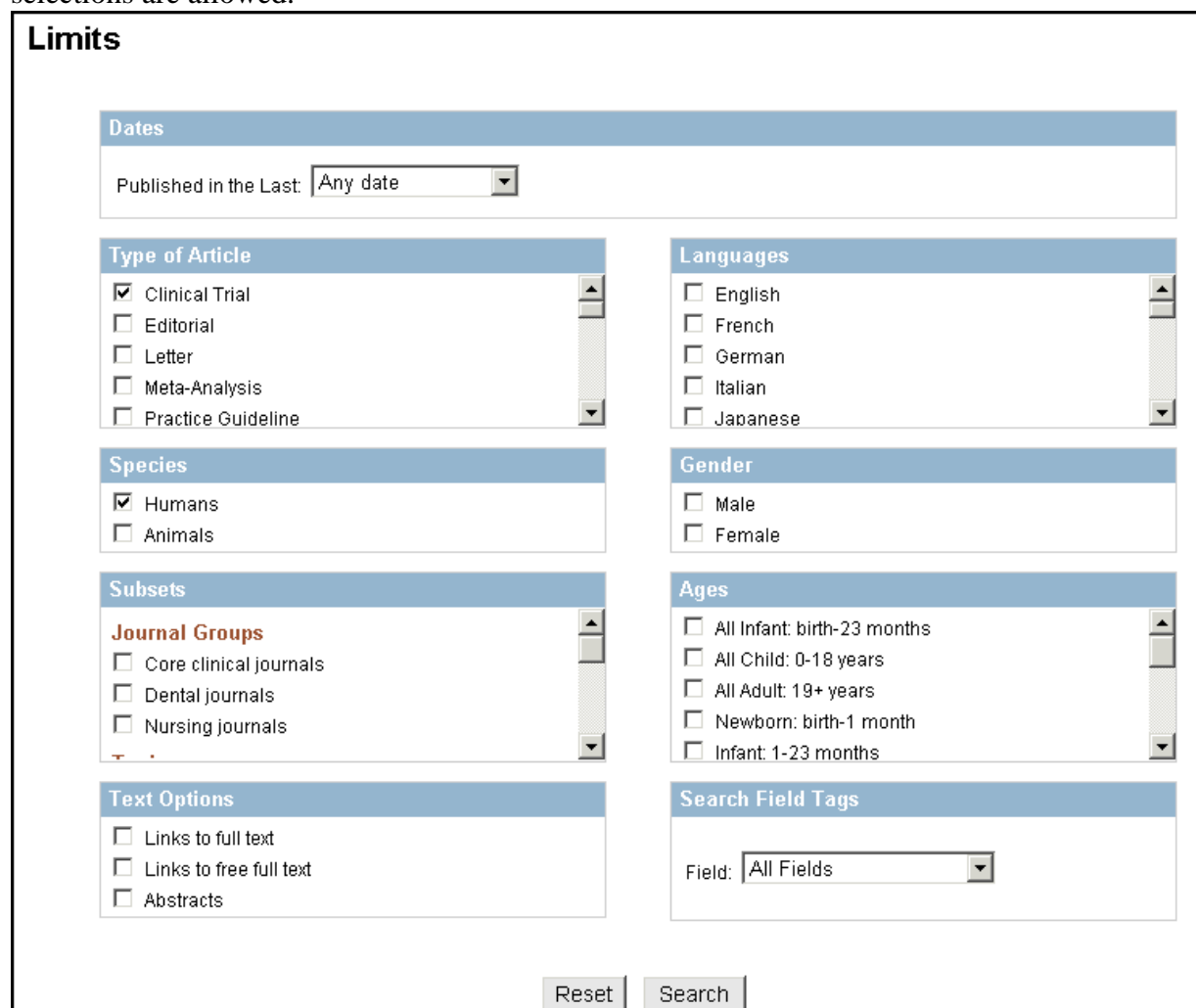
## Limits

Limits allow you to set commonly used parameters for your query, which may result in more relevant retrieval.



The screenshot shows the top of the PubMed search page. At the top left is a search box with 'PubMed' in the dropdown and 'indigestion abdominal pain' in the input field. To the right of the search box are links for 'RSS', 'Save search', 'Limits' (circled in red), 'Advanced search', and 'Help'. Below the search box are 'Search' and 'Clear' buttons.

Click Limits above the search box on any PubMed screen to bring up the Limits feature. Multiple selections are allowed.

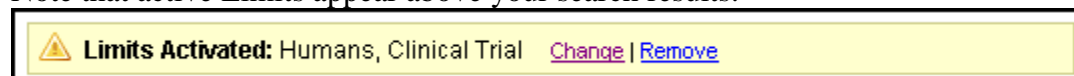


The screenshot shows the 'Limits' page with several sections for selecting filters:

- Dates:** Published in the Last: Any date (dropdown)
- Type of Article:** ☒ Clinical Trial, ☐ Editorial, ☐ Letter, ☐ Meta-Analysis, ☐ Practice Guideline
- Languages:** ☐ English, ☐ French, ☐ German, ☐ Italian, ☐ Japanese
- Species:** ☒ Humans, ☐ Animals
- Gender:** ☐ Male, ☐ Female
- Subsets:** **Journal Groups** (selected), ☐ Core clinical journals, ☐ Dental journals, ☐ Nursing journals
- Ages:** ☐ All Infant: birth-23 months, ☐ All Child: 0-18 years, ☐ All Adult: 19+ years, ☐ Newborn: birth-1 month, ☐ Infant: 1-23 months
- Text Options:** ☐ Links to full text, ☐ Links to free full text, ☐ Abstracts
- Search Field Tags:** Field: All Fields (dropdown)

At the bottom are 'Reset' and 'Search' buttons.

Note that active Limits appear above your search results.



The screenshot shows a yellow notification bar with a warning icon, the text 'Limits Activated: Humans, Clinical Trial', and links for 'Change' and 'Remove'.

To return to the Limits page to change your selections, click Change.

To clear your Limits selections, click Remove.

The following pages explain more about each type of limit.

## Dates:

PubMed contains citations published back to 1948. New citations are generally added Tuesday through Saturday.

Limit your search to articles **Published in the Last** pre-set date range, or specify a date range using yyyy/mm/dd format. Month and days are optional.

Note that PubMed will search both electronic and print publication dates when searching a range of dates. If using a single date, PubMed will search only the earliest publication date.

PubMed displays search results in descending date of entry order, i.e., last in, first out.

## Limiting by Type of Article (Publication Type)

- Use to limit your retrieval based on the type of material the citation represents.
- The selections at the top are frequently searched publication types.
- Scroll down to find an alphabetic list of more publication types.
- Multiple selections are allowed (ORed together).

## Limiting by Languages

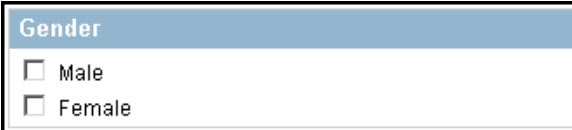
- Journals published in approximately forty languages are indexed.
- The selections at the top are frequently searched languages.
- Scroll down to find a complete alphabetic list of more languages.
- Multiple selections are allowed (ORed together).

## Limiting by Species (Humans or Animals)

- Use to limit to a specific group.
- If both options are checked, they are ANDed together.

## Limiting by Gender

- Use to limit by gender.
- If both options are checked, they are ANDed together.



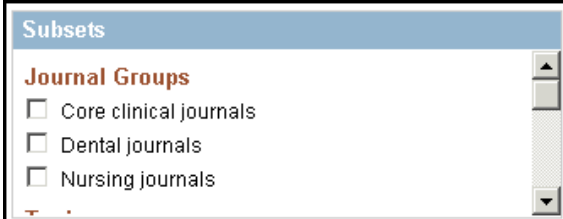
A screenshot of a web form titled "Gender" with a blue header. Below the header, there are two checkboxes: "Male" and "Female".

## Limiting by Subsets

Allows you to limit your retrieval to 3 types of groupings of records:

### 1. Journal Groups:

- ▶ Core clinical journals: 120 English-language journals from the formerly published *Abridged Index Medicus*
- ▶ Dental
- ▶ Nursing



A screenshot of a web form titled "Subsets" with a blue header. Below the header, there is a section titled "Journal Groups" with three checkboxes: "Core clinical journals", "Dental journals", and "Nursing journals".

### 2. Topics:

- ▶ AIDS
- ▶ Bioethics
- ▶ Cancer
- ▶ Complementary Medicine
- ▶ History of Medicine
- ▶ Space Life Sciences
- ▶ Systematic Reviews
- ▶ Toxicology

### 3. More Subsets:

- ▶ MEDLINE: completed citations with MeSH headings and other indexing terms that have also been checked for accuracy
- ▶ PubMed Central: citations for articles available free in NLM's archive of life sciences journal literature

- Multiple selections are allowed (ORed together).



Each Subject Subset uses its own specialized search strategy to aid in the retrieval of citations on these topics. You may view these strategies at [http://www.nlm.nih.gov/bsd/pubmed\\_subsets.html](http://www.nlm.nih.gov/bsd/pubmed_subsets.html).

## Limiting by Ages

Use to search for a specific age group or multiple age groups (ORed together).



A screenshot of a web form titled "Ages" with a blue header. Below the header, there are five checkboxes: "All Infant: birth-23 months", "All Child: 0-18 years", "All Adult: 19+ years", "Newborn: birth-1 month", and "Infant: 1-23 months".

## Text Options

Click the appropriate checkboxes to limit to those records that link to full text, link to free full text or contain abstracts.

Text Options	
<input type="checkbox"/>	Links to full text
<input type="checkbox"/>	Links to free full text
<input type="checkbox"/>	Abstracts

## Search Field Tags

Select a specific search tag to limit subsequent searches to that field.

Search Field Tags	
Field:	<div>All Fields All Fields Affiliation Author Corporate Author Create Date EC/RN Number Entrez Date Filter First Author Full Author Name Full Investigator Name</div>
Search	



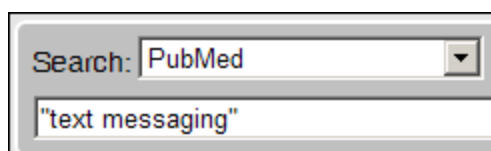
To **turn off all of the limits** before you run your next search, click the **Remove** link on the Limits Activated message or the **Reset** button on the Limits page.

## Phrase Searching

PubMed searches for phrases under these conditions:

1. The phrase is found in the MeSH, journal, author or investigator tables or indexes during the automatic term mapping process
2. The phrase is entered with a search tag:  
*kidney allograft [tw]*
3. The phrase is enclosed in double quotes: (The absence of a search tag indicates the search should be conducted in All Fields.)  
*"kidney allograft"*
4. The term is hyphenated:  
*first-line*
5. The term is truncated:  
*kidney allograft\**

Example:

A screenshot of a web search interface. At the top, it says 'Search: PubMed' with a dropdown arrow. Below that, the search term '"text messaging"' is entered into a text input field.

**PubMed Translation:** "text messaging"[All Fields]

- The above formats for phrase searching instruct PubMed to bypass automatic term mapping. Instead PubMed looks for the phrase in its Index of searchable terms. If the phrase is in the Index, PubMed will retrieve citations that contain the phrase.
- PubMed may fail to find a phrase because it is not in the Index.



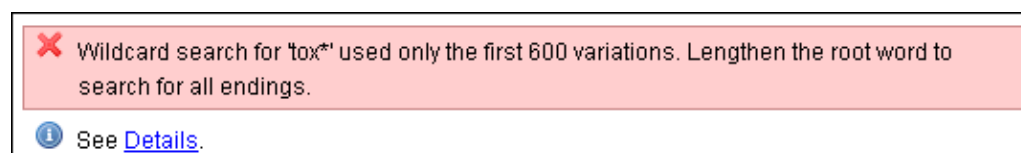
When you enclose a phrase in double quotes, PubMed will **not** perform automatic term mapping which includes explosions of MeSH terms. For example, “health planning” **will** include citations that have the MeSH heading, Health Planning, but **will not** include the more specific indentations (e.g., Health Care Rationing, Health Care Reform) that are included with automatic MeSH mapping and explosion.

## Truncation (finding all terms that begin with a given text string)

- Place an asterisk (\*) at the end of a string of characters to search for all terms that begin with that string. The asterisk may only be used at the *end* of a string of characters.

**Example:** *mimic\** will find all terms that begin with the letters m-i-m-i-c-; e.g., *mimic*, *mimics*, *mimicing*.

- PubMed searches the first 600 variations of a truncated term. If a truncated term, e.g., *tox\**, produces more than 600 variations, PubMed displays the following warning message on the Results screen in pink near the top of the screen:



Truncation turns off automatic term mapping. For example, *heart attack\** will not map to the MeSH term, Myocardial Infarction or include any of its more specific terms, e.g., Myocardial Stunning.

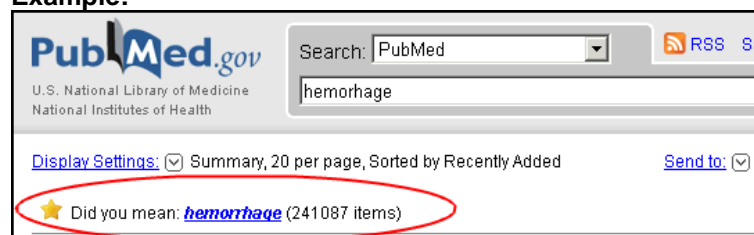
## Stopword List

- PubMed also compares each search to a list of commonly found terms that are referred to as "stopwords." Stopwords may be ignored. This list is available in PubMed's Help.

## Spell Check Feature

- Suggests alternative spellings for search terms that include misspellings.
- Terms entered with a search tag (e.g., [mh]; [majr]; [tw]) will *not* generate alternative spellings.

**Example:**



Click on the hyperlinked alternative spelling to generate that search.



- The alternative spellings are not based on a dictionary but rather the frequency with which a term appears in PubMed.
- The spell checking function will not display an alternative spelling for misspellings that have a high frequency of occurrence in PubMed or for terms with numbers or fewer than five characters.



**Practice Exercises: Limits & Phrase Searching**

1. Using only the search box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to the publication type (Type of Article), Clinical Trial.
2. Compare the searches “wisdom teeth” and wisdom teeth (with and without quotes), using the Details link on the Advanced Search screen. What accounts for the difference?
3. Find references about tuberculosis from the AIDS literature available in free full text.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Suggested Answers: Limits and Phrase Searching

1. Using only the search box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to the publication type (Type of Article), Clinical Trial.

Details screen showing the search including the Clinical Trial limit:

### Search Details

**Query Translation:**

```

(("living donors"[MeSH Terms] OR ("living"[All Fields]
AND "donors"[All Fields]) OR "living donors"[All Fields] OR
("living"[All Fields] AND "donor"[All Fields]) OR "living
donor"[All Fields]) AND ("liver transplantation"[MeSH
Terms] OR ("liver"[All Fields] AND "transplantation"[All
Fields]) OR "liver transplantation"[All Fields])) AND
Clinical Trial[ptyp]

```

**Result:**

[135](#)

**Translations:**

liver transplantation	"liver transplantation"[MeSH Terms] OR ("liver"[All Fields] AND "transplantation"[All Fields]) OR "liver transplantation"[All Fields]
living donor	"living donors"[MeSH Terms] OR ("living"[All Fields] AND "donors"[All Fields]) OR "living donors"[All Fields] OR ("living"[All Fields] AND "donor"[All Fields]) OR "living donor"[All Fields]

**Database:**

PubMed

**User query:**

living donor liver transplantation AND (Clinical Trial[ptyp])

2. Compare the searches “wisdom teeth” and wisdom teeth (with and without quotes), using the Details link on the Advanced Search screen. What accounts for the difference?

<b>Query Translation:</b>	
<pre>"molar, third"[MeSH Terms] OR ("molar"[All Fields] AND "third"[All Fields]) OR "third molar"[All Fields] OR ("wisdom"[All Fields] AND "teeth"[All Fields]) OR "wisdom teeth"[All Fields]</pre>	
Search	URL
<b>Result:</b>	
<a href="#">6006</a>	
<b>Translations:</b>	
wisdom	"molar, third"[MeSH Terms] OR ("molar"[All Fields] AND "third"[All Fields]) OR "third molar"[All Fields] OR
teeth	("wisdom"[All Fields] AND "teeth"[All Fields]) OR "wisdom teeth"[All Fields]
<b>Database:</b>	
PubMed	
<b>User query:</b>	
wisdom teeth	

Using quotes bypasses ATM and misses many records which were indexed with the MeSH term, Molar, Third:

<b>Query Translation:</b>	
<pre>"wisdom teeth"[All Fields]</pre>	
Search	URL
<b>Result:</b>	
<a href="#">512</a>	
<b>Database:</b>	
PubMed	
<b>User query:</b>	
"wisdom teeth"	

3. Find references about tuberculosis from the AIDS literature available in free full text.

U.S. National Library of Medicine  
National Institutes of Health

tuberculosis Search Clear

### Limits

**Dates**  
Published in the Last: Any date

**Type of Article**  
☐ Clinical Trial  
☐ Editorial  
☐ Letter  
☐ Meta-Analysis  
☐ Practice Guideline

**Languages**  
☐ English  
☐ French  
☐ German  
☐ Italian  
☐ Japanese

**Species**  
☐ Humans  
☐ Animals

**Gender**  
☐ Male  
☐ Female

**Subsets**  
**Topics**  
☒ AIDS  
☐ Bioethics  
☐ Cancer  
☐ Complementary Medicine

**Ages**  
☐ All Infant: birth-23 months  
☐ All Child: 0-18 years  
☐ All Adult: 19+ years  
☐ Newborn: birth-1 month  
☐ Infant: 1-23 months

**Text Options**  
☐ Links to full text  
☒ Links to free full text  
☐ Abstracts

**Search Field Tags**  
Field: All Fields

## Boolean Logical Operators

In the context of database searching, Boolean logic refers to the logical relationships among search terms.

- The Boolean operators AND, OR, NOT can be used to combine search terms in PubMed. They must be entered in uppercase letters.

Logical Operator **OR**:

- Used to retrieve a set in which each citation contains *at least one* of the search terms.
- Use OR when you want to pull together articles on similar topics.

**Example:**     *football OR hockey OR soccer*

Each circle in the diagram to the right represents the retrieval for each term. The grey areas represent the retrieval for this example – all records that include any one of these terms.



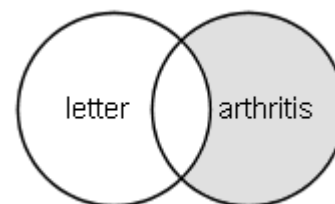
The table below represents sample results for each term, then for the terms combined with OR.

<u>Search terms</u>	<u>Results</u>
football	3948
hockey	1466
soccer	3137
football OR hockey OR soccer	7538

Logical Operator **NOT**:

- Retrieves a set from which citations to articles containing specified search terms following the NOT operator are eliminated.
- Use the NOT operator with caution; you might eliminate relevant articles.

**Example:**     *arthritis NOT letter*



Note in the diagram to the right and in the sample search results below that the retrieval is a portion of the total retrieval for arthritis – that portion not including the term letter.

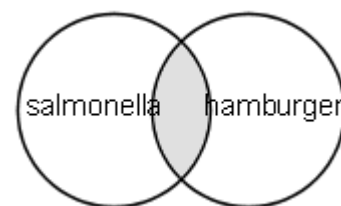
<u>Search terms</u>	<u>Results</u>
arthritis	185375
letter	686049
arthritis NOT letter	176352

**Logical Operator AND:**

- Used to retrieve a set in which each citation contains *all* search terms.

**Example:** *salmonella AND hamburger*

Note in the diagram to the right and in the sample search results below that the retrieval is only the overlap of the results for each term – those records in which both terms appear.



<u>Search terms</u>	<u>Results</u>
salmonella	69432
hamburger	2703
salmonella AND hamburger	14

- AND is the default operator used in PubMed. If you do not include Boolean operators in your search, PubMed will automatically use AND between terms.

**Example:** *diabetes mellitus phototherapy*  
 PubMed searches as: *diabetes mellitus AND phototherapy*

**Nesting**

- When using multiple Boolean operators in PubMed, they are processed left to right.

**Example:** *salmonella AND hamburger OR eggs*  
 This will retrieve records that include both terms *salmonella* AND *hamburger* as well as all records with the term *eggs*, whether or not they contain the other two terms.



- To change the order in which terms are processed, enclose the terms(s) in parentheses. The terms inside the set of parentheses will be processed as a unit and then incorporated into the overall strategy. **This is called nesting.**

**Example:** *salmonella AND (hamburger OR eggs)*  
 This will retrieve records that contain the term *salmonella*, as well as one or both of the terms *hamburger* OR *eggs*.



## History

- History available from the Advanced Search screen.
- Temporarily holds up to 100 searches and links to results.
- The History screen displays:
  - Your search query
  - Most recent 5 searches are displayed
  - The time of the search
  - The number of citations in your search results
  - Search statement numbers menu for combining searches

Search History			
Search	Most Recent Queries	Time	Result
#6	Search <b>salmonella enteritidis</b>	12:34:17	<a href="#">5284</a>
#5	Search <b>salmonella AND (hamburger OR eggs)</b>	12:33:15	<a href="#">1354</a>
#4	Search <b>salmonella AND hamburger OR eggs</b>	12:33:06	<a href="#">45047</a>
#3	Search <b>salmonella AND hamburger</b>	12:32:28	<a href="#">14</a>
#2	Search <b>arthritis NOT letter</b>	12:32:07	<a href="#">186151</a>

[More History](#)
[Clear History](#)

[Search History Instructions](#)

## Using History

- You can use the search statement numbers shown in History in search strategies.

Example:

Search: **PubMed**

#6 AND antibodies



Type Boolean operators in all caps as shown in the example above.

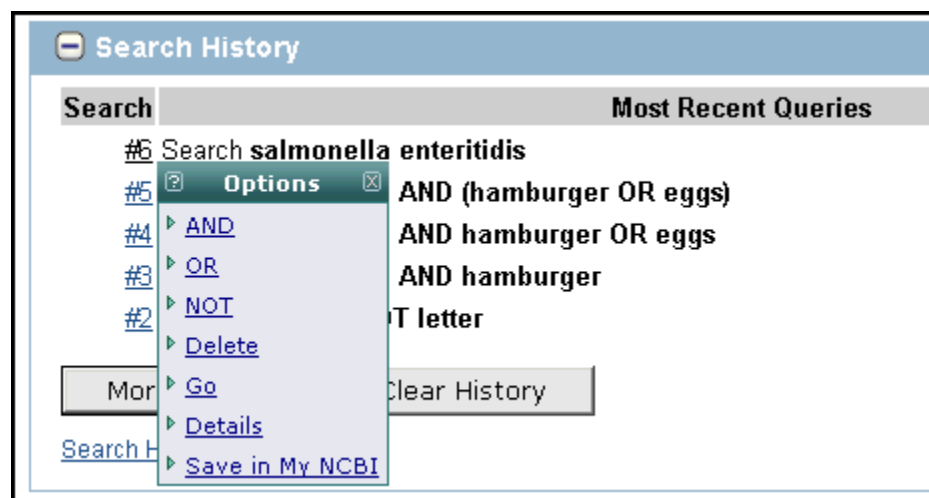
Other examples:

#8 AND #10

#7 OR #14

## Search Statement Number Menu

- Click on the search statement number to open an Options menu:



**Options Menu** includes:

- Boolean operators AND, OR or NOT to add the search to the search box
- Delete the individual search from History
- Re-run the search using the Go option
- Display the search details
- Save in My NCBI

## History Tips:

- Maximum number of searches that can be held in History is **100**.
- The search history will be **deleted after 8 hours of inactivity**.
- If a search is repeated, its original number is moved to the top.
- A separate Search History will be kept for each of the Entrez databases although the search statement numbers will be assigned sequentially for all databases.



History displays the last five searches. When there are more than five, click the **More History** button to see the full display. Click **Less History** to revert to the shorter display.

Click on the **Clear History** button available at the bottom of the History screen to remove all searches from the History.





## Suggested Answers: Boolean Operators and History

1. In one search, find references about the relationships between circadian rhythms and either cortisol or melatonin in humans.

circadian rhythms AND (cortisol OR melatonin) AND humans

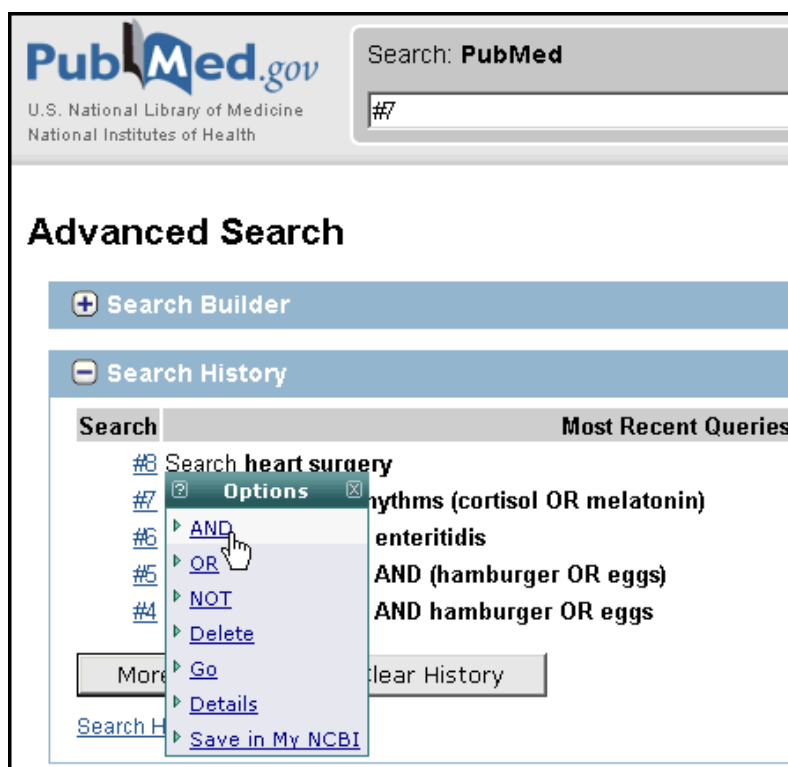
[You may also use the Humans checkbox from the Limits area on the Advanced Search screen. These terms can be in any order but the OR phrase must be in parentheses.]

2. Find references about heart surgery (notice how the term is mapped using **Search details**). Using History, combine this search with the previous search to find references about heart surgery, circadian rhythms and cortisol or melatonin in humans.

After running a search for heart surgery, go to History area of the Advanced Search screen, click on the search number link for your circadian rhythm search and select AND. Repeat with your heart surgery search. Click the **Search** button.

OR

Combine the two searches by typing in the search box:  
#7 AND #8  
(substituting the numbers of the appropriate searches).



## Searching with MeSH and the MeSH Database

### MeSH Database

The MeSH Database allows you to:

- Locate and select MeSH terms (Headings, Subheadings, & Publication Types); Supplementary Concept terms (Substance Names) and Pharmacological Action terms.
- See the definition and other helpful information for a MeSH term.
- Build a PubMed search strategy.
- Display MeSH terms in the hierarchy.
- Limit MeSH terms to a major concept for a search.
- Attach subheadings for a search.
- Link to the NLM MeSH Section's MeSH Browser.

### How to Get There

- Click MeSH link at the bottom of the Advanced Search screen; Click on **MeSH Database** under More Resources on the PubMed home page; or use the database selection menu on the search bar.

Let's use the MeSH Database to find the proper **MeSH term** for condition of *double vision* and then search PubMed for relevant citations.

Enter the term, **double vision**, in the search box and click the **Go** button.

for double vision [Go] [Clear]

[Limits](#) [Preview/Index](#) [History](#) [Clipboard](#) [Details](#)

**MeSH** is the U.S. National Library of Medicine's controlled vocabulary used for indexing articles for MEDLINE/PubMed. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

- Use the MeSH database to find Medical Subject Heading Terms and build a search strategy.

### Summary format:

- Select PubMed from the Links pull-down menu to run a PubMed search with that term.

**Suggestions** are MeSH or Entry terms generated by an algorithm that compares letter combinations.

**Scope Note** (meaning for this concept is displayed.)

**Links** allows you to use the term in a PubMed search, use it as a major topic, link to the MeSH Section MeSH Browser or Clinical Queries.

for double vision [Go] [Clear] [Save Search]

[Limits](#) [Preview/Index](#) [History](#) [Clipboard](#) [Details](#)

Suggestions: [Double vision](#); [Vision, double](#); [Double effect](#); [Effect, double](#); [Color vision](#); [Tests, vision](#); [Test, vision](#); [Dolo visano](#); [Enoptic vision](#); [Color visions](#); [more...](#)

Display: [Summary](#) Show: [20](#) Send to: [\[ \]](#)

All: [7](#) [X](#)

Items 1 - 7 of 7 One page.

☐ 1: **Diplopia**

A visual symptom in which a single object is perceived by the visual system as two or more objects rather than one. Disorders associated with this condition include REFRACTIVE ERRORS; STRABISMUS; OCULOMOTOR NERVE DISEASES; TROCHLEAR NERVE DISEASES; ABDUCENS NERVE DISEASES; and diseases of the BRAIN STEM.

**Links**

- ▶ PubMed
- ▶ PubMed - Major Topic
- ▶ Clinical Queries
- ▶ NLM MeSH Browser

Let's search for the supplementary concept term: **1,4-bis(chloromethyl)benzene**



Some substance names are long and "complicated." Please note also that when searching any Entrez database for a term with parentheses, e.g., 1,4-bis(chloromethyl)benzene, do *not* enter the parentheses.

for 1,4-bis chloromethyl benzene

Go Clear Save Search

Limits Preview/Index History Clipboard Details

Suggestions: [1,4 bis chloromethyl benzene](#), [1,4 bis trichloromethyl benzene](#), [1,4 bis chloromethoxymethyl benzene](#), [1,4 bis dimethylamino benze](#), [1,2 bis hydroxymethyl benzene](#), [1,2 bis chloromethoxy ethane](#), [1,3 benzenedicarbonyl chloride](#), [1,2 bis trimethylsilyl benzene](#), [1 chloro 4 dichloromethyl benzene](#), [4 chloromethyl benzoylformate](#), [More...](#)

Display Full Show 20 Send to

All: 1

- If making selections (e.g., Subheadings, etc.), use the [Send to Search Box](#) feature to see PubMed records with those specifications.
- Select PubMed under the Links menu to retrieve all records for the MeSH Term.
- Select [NLM MeSH Browser](#) under the Links menu for additional information.

☐ 1: 1,4-bis(chloromethyl)benzene [Substance Name]

causes contact dermatitis; structure  
Date introduced: January 1, 1980

Registry Number: 623-25-6

Heading Mapped to:

- [Xylenes](#)

Entry Terms:

- 1,4-bischloromethylbenzene
- 1,4-bischloromethylbenzol

Previous Indexing:

- [HYDROCARBONS, CHLORINATED \(1980-1982\)](#)
- [BENZYL CPDS \(1980-1980\)](#)

Links

- PubMed
- Clinical Queries
- NLM MeSH Browser
- PubChem Compound
- PubChem Substance

*These terms will display in search retrieval with the label [Substance Name].*

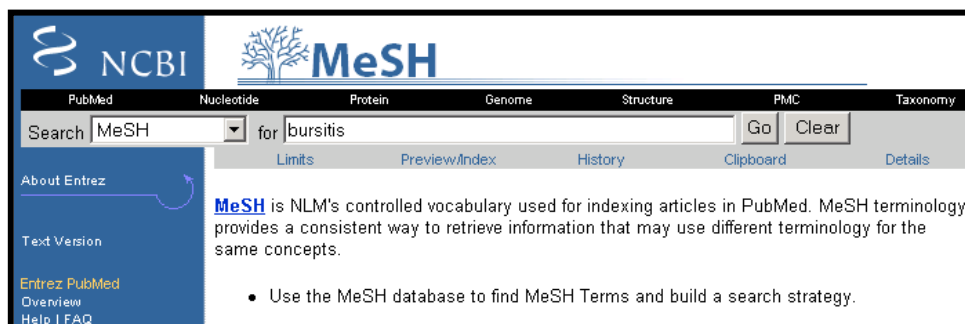
*To see additional information for any term, use the link to the NLM MeSH Browser from the Links menu.*



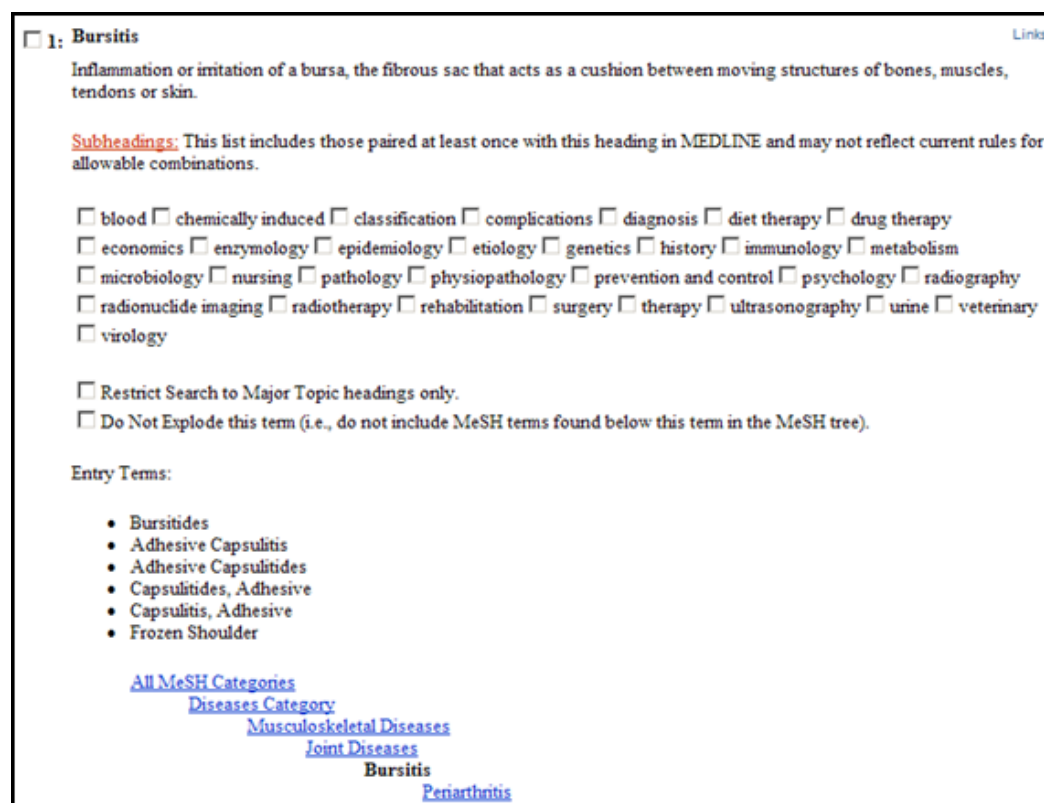
The Feature tabs (Limits, History, etc.) from the MeSH Database deal specifically with the MeSH Database not the PubMed database.

Now, let's use the MeSH Database to build a search strategy for a search for citations about the *diagnosis of bursitis* which requires the use of a subheading.

Enter the term, *bursitis*, in the search box and click the **Go** button.



The single record retrieved is displayed in the Full format:



☐ **Bursitis** Links

Inflammation or irritation of a bursa, the fibrous sac that acts as a cushion between moving structures of bones, muscles, tendons or skin.

**Subheadings:** This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ blood ☐ chemically induced ☐ classification ☐ complications ☐ diagnosis ☐ diet therapy ☐ drug therapy ☐ economics ☐ enzymology ☐ epidemiology ☐ etiology ☐ genetics ☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ nursing ☐ pathology ☐ physiopathology ☐ prevention and control ☐ psychology ☐ radiography ☐ radionuclide imaging ☐ radiotherapy ☐ rehabilitation ☐ surgery ☐ therapy ☐ ultrasonography ☐ urine ☐ veterinary ☐ virology

☐ Restrict Search to Major Topic headings only.

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

**Entry Terms:**

- Bursitides
- Adhesive Capsulitis
- Adhesive Capsulitides
- Capsulitides, Adhesive
- Capsulitis, Adhesive
- Frozen Shoulder

[All MeSH Categories](#)  
[Diseases Category](#)  
[Musculoskeletal Diseases](#)  
[Joint Diseases](#)  
**Bursitis**  
[Periarthritis](#)

Use the checkboxes to select subheadings. Click on the **Subheadings** link to see a list of subheading definitions.

Use these checkboxes to restrict to major topic or to not explode a term.

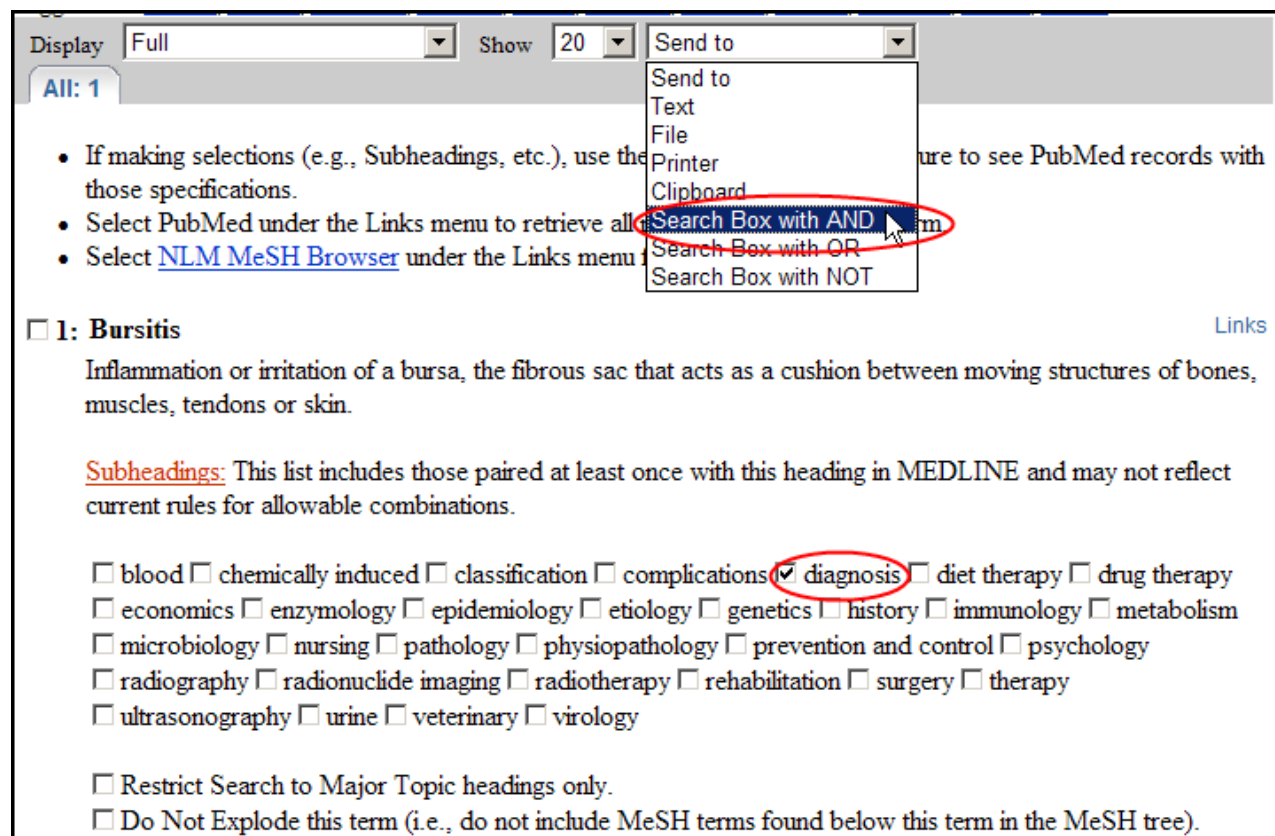
Entry Terms (synonyms) are provided.

MeSH hierarchy is displayed with searched term in boldface.

## Send to Search Box

To specify a search for: *Citations about the **diagnosis** of bursitis*

1. Select the diagnosis subheading from the Full display screen.
2. Select Search Box with AND from the **Send to** pull-down menu.



The screenshot shows the PubMed 'Full' display screen for the term 'Bursitis'. The 'Send to' dropdown menu is open, showing options: Send to, Text, File, Printer, Clipboard, Search Box with AND (selected), Search Box with OR, and Search Box with NOT. The 'diagnosis' subheading is selected in the list of subheadings. The search box contains the text '"Bursitis/diagnosis"[MeSH]'.

Display: Full Show: 20 Send to: [dropdown]

All: 1

- If making selections (e.g., Subheadings, etc.), use the [dropdown] to see PubMed records with those specifications.
- Select PubMed under the Links menu to retrieve all records.
- Select [NLM MeSH Browser](#) under the Links menu to view the MeSH tree.

☐ 1: Bursitis [Links](#)

Inflammation or irritation of a bursa, the fibrous sac that acts as a cushion between moving structures of bones, muscles, tendons or skin.

**Subheadings:** This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ blood ☐ chemically induced ☐ classification ☐ complications ☒ diagnosis ☐ diet therapy ☐ drug therapy ☐ economics ☐ enzymology ☐ epidemiology ☐ etiology ☐ genetics ☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ nursing ☐ pathology ☐ physiopathology ☐ prevention and control ☐ psychology ☐ radiography ☐ radionuclide imaging ☐ radiotherapy ☐ rehabilitation ☐ surgery ☐ therapy ☐ ultrasonography ☐ urine ☐ veterinary ☐ virology

☐ Restrict Search to Major Topic headings only.

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

The term with any specifications will appear in the Search Box:



The screenshot shows the PubMed search box with the text '"Bursitis/diagnosis"[MeSH]' entered. Below the search box are two buttons: 'Search PubMed' and 'Clear'.

"Bursitis/diagnosis"[MeSH]

Search PubMed Clear

To add additional terms to this strategy, continue searching the database and add terms to the Search Box using the Send to Search Box feature.

Now, let's adjust our search to specifically look for articles discussing the *diagnosis of bursitis in the knee joint*. Restrict to citations where the **major focus of the article is knee joints** and then add this term to the strategy we are building:

Searching on the next term. Click **Go**.

Here's the strategy being built.

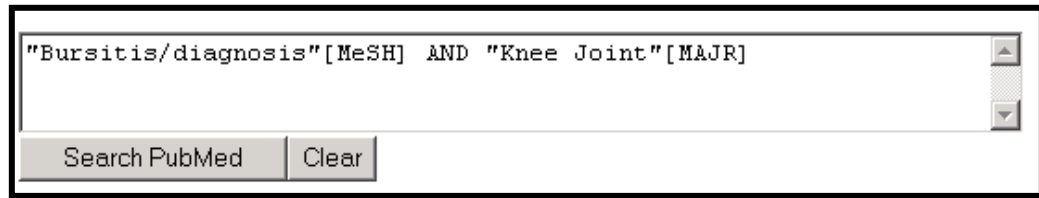
This brings you to the Full display for **Knee Joint**.

1. Click in the check box for: **Restrict Search to Major Topic headings only**.

2. Select **Search Box with AND** from the **Send to** pull-down menu.

Now, the search is built and is ready to be run in PubMed. Click the Search PubMed button below the Search box:

Click **Search PubMed** button.



The screenshot shows a web-based search interface. At the top is a large text input field containing the query: "Bursitis/diagnosis"[MeSH] AND "Knee Joint"[MAJR]. To the right of the input field are two small, vertically stacked arrow buttons. Below the input field are two buttons: "Search PubMed" on the left and "Clear" on the right. The entire interface is enclosed in a thin black border.



## Practice Exercises: Searching with MeSH

Try using the MeSH database to build your searches that require the use of MeSH headings.

1. Find articles discussing prostate cancer as the main focus of the article. Use the MeSH Database to begin your search. Restrict to studies involving treatment by leuprolide.
2. Find references discussing the economics of community-acquired pneumonia.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Suggested Answers: Searching with MeSH

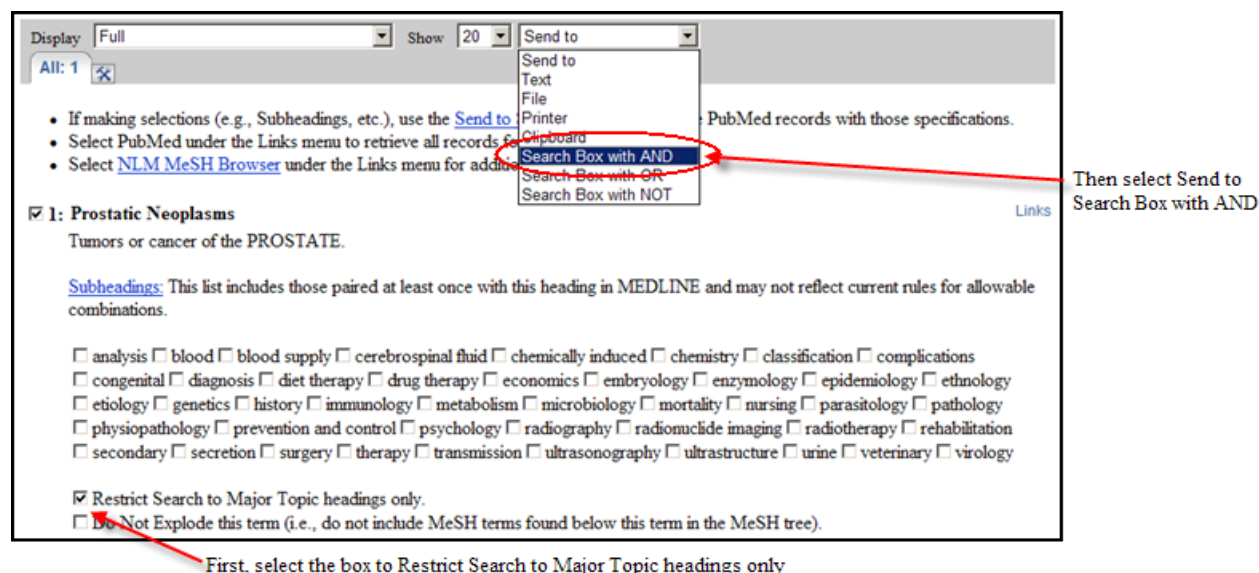
1. Find articles discussing prostate cancer as the main focus of the article. Use the MeSH Database to begin your search. Restrict to studies involving treatment by leuprolide.

Search prostate cancer in the MeSH Database.

Click term to reach Full display.



Restrict to Major Topic and add the term to your search:



With “Prostatic Neoplasms”[Majr] in the MeSH Database Search Box, find the record for leuprolide and select the therapeutic use subheading. Send to Search Box with AND.

The screenshot shows the PubMed MeSH Database search interface. At the top, there is a search box with the text "for leuprolide" and buttons for "Go", "Clear", and "Save Search". Below this are tabs for "Limits", "Preview/Index", "History", "Clipboard", and "Details". A search box contains the text "Prostatic Neoplasms"[Majr]. Below the search box are buttons for "Search PubMed" and "Clear".

Suggestions: [Leuprolide](#), [Leuprorelin](#), [Leptolide](#), [Lepidolide](#), [Leupeptin](#), [Leupeptins](#), [Leucinamide](#), [Leupurin](#), [Eupatolide](#), [Leu pro](#), [More...](#)

Display: Full Show: 20 Send to: [dropdown menu]

All: 1 [X]

- If making selections (e.g., Subheadings, etc.), use the [Send to S](#) with those specifications.
- Select PubMed under the Links menu to retrieve all records for
- Select [NLM MeSH Browser](#) under the Links menu for additional

**1: Leuprolide** [Links](#)

A potent synthetic long-acting agonist of GONADOTROPIN-RELEASING HORMONE that regulates the synthesis and release of pituitary gonadotropins, LUTEINIZING HORMONE and FOLLICLE STIMULATING HORMONE.

Year introduced: 1992

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ administration and dosage ☐ adverse effects ☐ analogs and derivatives ☐ analysis ☐ antagonists and inhibitors ☐ blood ☐ chemical synthesis ☐ chemistry ☐ classification ☐ contraindications ☐ diagnostic use ☐ economics ☐ immunology ☐ isolation and purification ☐ metabolism ☐ pharmacokinetics ☐ pharmacology ☐ standards ☒ therapeutic use ☐ toxicity

☐ Restrict Search to Major Topic headings only.

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Once satisfied with the search strategy, click Search PubMed:

The screenshot shows the PubMed search box with the combined search strategy: "Prostatic Neoplasms"[Majr] AND "Leuprolide/therapeutic use"[Mesh]. Below the search box are buttons for "Search PubMed" and "Clear".

- Find references discussing the economics of community-acquired pneumonia.

Search pneumonia in the MeSH Database.

From the full display, select the economics subheading.

**1: Pneumonia** Links

Inflammation of any part, segment or lobe, of the lung parenchyma.  
Year introduced: 1963

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ blood ☐ cerebrospinal fluid ☐ chemically induced ☐ classification ☐ complications ☐ congenital  
☐ diagnosis ☐ diet therapy ☐ drug therapy ☒ economics ☐ embryology ☐ enzymology ☐ epidemiology  
☐ ethnology ☐ etiology ☐ genetics ☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ mortality  
☐ nursing ☐ parasitology ☐ pathology ☐ physiology ☐ physiopathology ☐ prevention and control  
☐ psychology ☐ radiography ☐ radionuclide imaging ☐ radiotherapy ☐ rehabilitation ☐ statistics and  
 numerical data ☐ surgery ☐ therapeutic use ☐ therapy ☐ transmission ☐ ultrasonography ☐ urine  
☐ veterinary ☐ virology

☐ Restrict Search to Major Topic headings only.  
☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Search for the next term: community acquired.

*Read the Scope Note. If relevant, click on the term to see the Full Display for more information including subheadings.*

for community acquired Go Clear Save Search

Limits Preview/Index History Clipboard Details

"Pneumonia/economics" [MeSH]

Search PubMed Clear

Suggestions: [Community actions](#); [Community action](#); [Action, community](#); [Actions, community](#); [Community medicine](#); [Consents, community](#); [Community relation](#); [Consent, community](#); [Community consents](#); [Community pharmacy](#); [more...](#)

Display Summary Show 20 Send to

All: 1 X

**1: Community-Acquired Infections** Links

Any infection acquired in the community, that is, contrasted with those acquired in a health care facility (CROSS INFECTION). An infection would be classified as community-acquired if the patient had not recently been in a health care facility or been in contact with someone who had been recently in a health care facility.  
Year introduced: 1994

Send the final strategy to PubMed:

"Pneumonia/economics" [MeSH] AND "Community-Acquired Infections/economics" [MeSH]

Search PubMed Clear

## Using the Search Builder to Search by Field

There are several ways to search using a specific field (e.g., author, title, journal name). The Search Builder on the Advanced Search page is one convenient method.

- Use to search for terms within selected fields
- Use the pull-down menu to change the search field(s)
- Click AND, OR or NOT button to add term(s) to search box
- Auto-complete feature available for Author, First Author, Last Author, and Journal
- Click Search Builder Instructions for help

### Author and Journal Search Example:

Step 1:

Select Author from field selection.

Type in last name of author.

Select name using the auto-complete feature.

Click AND button to add to search box.



For the first field, it does not matter whether you use AND, OR or NOT.

Step 2:

Select Journal from field selection.

Type in journal name.

Select journal title using auto-complete feature.

Click AND button to add to search box.

Step 3: When you've completed entering your terms, click the Search button.

## Using the Index feature

- Click on the Index button to the right of each line to display the index of searchable terms for the selected search field
- View and select terms from the Index to add them to your search strategy.
- Use the <ctrl> key (PC) or <Command> key (Mac) to select more than one term from one index to combine with OR.

## Selecting a field and entering a term to look up in the Index

**Example 1:** Use the Index function on the Search Builder to find citations to articles about gene expression where the first author's affiliation is listed as Princeton University.

Subject term entered in the Advanced Search search box.

Select affiliation from the pull-down menu.

PubMed displays a portion of the alphabetical list of available terms for the selected search field. Scroll up and down this window using the scroll bar.

The number of citations that contain the term appears in parentheses to the right of the term.

To scroll up or down the entire Index for the field, click the Previous or Next links.

- Click on the term to highlight it.
- Click on the Close Index List link to collapse the Index display if desired.
- Continue selecting fields and adding search terms until your strategy is complete. Then click the **Search** button at the top of screen.

Search box shows the search term and the search field.



**Example 2:** Find articles discussing the diagnosis of osteosarcoma or using chemotherapy (drug therapy) to treat osteosarcoma. Limit to articles where aspects are the main point.

### Advanced Search

Search Builder

MeSH Major Topic ▼ osteosarcoma Index

osteosarcoma/chemistry (92)  
osteosarcoma/classification (28)  
osteosarcoma/complications (867)  
osteosarcoma/congenital (8)  
osteosarcoma/cytology (2461)  
**osteosarcoma/diagnosis (4255)**  
osteosarcoma/drug therapy (1416)  
osteosarcoma/enzymology (220)  
osteosarcoma/epidemiology (313)  
osteosarcoma/ethnology (3)

[Previous 200](#)  
[Next 200](#)  
[Close Index List](#)

Add to Search Box with: AND OR NOT

[Search Builder](#)  
[Instructions](#)

Select Search field from drop-down menu.  
Type in search term(s)  
Click Index button.

Use the Ctrl-key (PC) or the Command-key (Mac) to OR together multiple terms.

Click the desired Boolean connector to add terms (OR'ed together) to the query.

- In this example, click on the AND button which adds your terms to the Advanced Search top search box. Then click the Search button to run the search:



See page 83 for more on searching by fields using search field tags.

## **NOTES**



## Finding a Specific Citation

### Using the Search box

Simply type in the available information into the Search box:

*Exp Neurol* 187 2 279

The screenshot shows the PubMed.gov website interface. At the top, there's a navigation bar with 'NCBI', 'Resources', and 'How To'. The main search area features a 'Search' dropdown menu set to 'PubMed' and a text input field containing 'Exp Neurol 187 2 279', which is circled in red. To the right of the search bar are links for 'RSS', 'Save search', 'Advanced search', and 'Help'. Below the search bar, there's a 'Search' button and a 'Clear' button. The left sidebar includes 'Display Settings' (set to 'Abstract') and a 'Send to' button. The main content area displays the search results for the citation 'Exp Neurol. 2004 Jun;187(2):279-88.' The title of the article is 'Fibrillization of alpha-synuclein and tau in familial Parkinson's disease caused by the A53T alpha-synuclein mutation.' The authors listed are 'Kotzbauer PT, Glasson BL, Kravitz AV, Golbe LJ, Mark MH, Trojanowski JQ, Lee VM.' The abstract text describes the study on alpha-synuclein and tau protein in familial Parkinson's disease. The right sidebar features an 'ELSEVIER FULL-TEXT ARTICLE' badge, a 'Related articles' section with three links, a 'Cited by 4 PubMed Central articles' section with three links, and an 'All links from this record' section at the bottom.

NCBI Resources How To My NCBI Sign In

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed  
Exp Neurol 187 2 279

RSS Save search Advanced search Help

Search Clear

Display Settings: Abstract Send to:

Exp Neurol. 2004 Jun;187(2):279-88.

**Fibrillization of alpha-synuclein and tau in familial Parkinson's disease caused by the A53T alpha-synuclein mutation.**

Kotzbauer PT, Glasson BL, Kravitz AV, Golbe LJ, Mark MH, Trojanowski JQ, Lee VM.

Center for Neurodegenerative Disease Research, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA 19104, USA. kotzbaue@mail.med.upenn.edu

Mutations in the alpha-synuclein (alpha-syn) gene are responsible for a rare familial parkinsonism syndrome, a finding that has led to extensive characterization of altered alpha-syn structure in sporadic Parkinson's disease (PD) and other neurodegenerative disorders. We report here the immunohistochemical, biochemical and ultrastructural characterization of alpha-syn neuropathology in a case of familial PD with the A53T alpha-syn gene mutation. Insoluble filamentous alpha-syn lesions were detected in almost all brain regions examined and as in sporadic PD, we observed the accumulation of insoluble nitrated alpha-syn in this familial disorder. Significant accumulations of filamentous insoluble tau protein also were detected in some brain regions of this patient, suggesting a role for A53T mutant alpha-syn in tau fibrillization. Indeed, in vitro studies of tau and alpha-syn fibrillization showed that the A53T mutation accelerated alpha-syn fibril formation, initiated tau assembly into filaments and synergistically enhanced fibrillization of both tau and alpha-syn. Our data implicate fibrillization of alpha-syn and tau in the pathogenesis of PD, and suggest that distinct amyloidogenic proteins may cross-seed each other in neurodegenerative diseases.

PMID: 15144854 [PubMed - indexed for MEDLINE]

+ Publication Types, MeSH Terms, Substances

+ LinkOut

ELSEVIER  
FULL-TEXT ARTICLE

Related articles

- Human alpha-synuclein-harboring familial Parkinson's disease-linked Ala-53[Proc Natl Acad Sci U S A. 2002]
- Initiation and synergistic fibrillization of tau and alpha-synuclein. [Science. 2003]
- Fibrils formed in vitro from alpha-synuclein and two mutant forms linked to Parkinson's[Biochemistry. 2000]

Review From genetics to pathology: tau and alpha-synuclein at[Philos Trans R Soc Lond B Biol Sci. 2001]

Review Filamentous nerve cell inclusions in neurodegen[Philos Trans R Soc Lond B Biol Sci. 1999]

> See reviews... > See all...

Cited by 4 PubMed Central articles

- Physiological and Pathological Role of Alpha-synuclein in Parkinson's Disease Through Iroq[Int J Mol Sci. 2009]
- Clinical, neuropathological and genotypic variability in SNCA A53T familial Parkinson[Acta Neuropathol. 2008]
- Disrupted membrane homeostasis and accumulation of ubiquitinated proteins in a mouse[Am J Pathol. 2008]

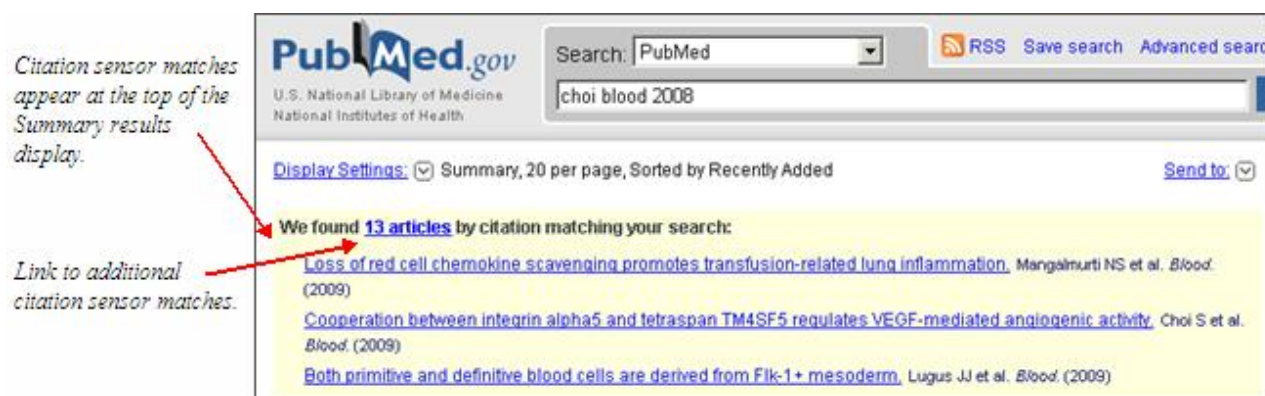
> See all...

All links from this record

## Citation sensor

The Citation Sensor is a feature that assists searchers looking for a specific article.

- It looks for combinations of search terms that are characteristic of citation searching, e.g., volume/issue numbers, author names, journal titles, publication dates.
- Whenever possible the Citation Sensor matches the search with citations in PubMed.
- If your search invokes the Citation Sensor, you will see a yellow area above the default retrieval with links to one or more citations for your consideration:



## Single Citation Matcher

The Single Citation Matcher, available from the PubMed Home page and the Advanced Search page, allows you to fill in the information you have about a citation (e.g., author, title, journal, volume, issue, page) by field.

NCBI Resources How To

### PubMed Single Citation Matcher

- Use this tool to find PubMed citations. You may omit any field.
- Journal may be the full title or the title abbreviation.
- For first and last author searching, use smith jc format.

Journal:

Date:  (month and day are optional)

Volume:  Issue:  First page:

Author name (see [help](#))

☐ Only as first author ☐ Only as last author

Title words:

*Autocomplete feature available for Journal and Author name*

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed

["Experimental neurology"[Jour] AND 187[volume] AND 2[issue] AND 279[page]]

Display Settings: Abstract Send to:

Exp Neurol. 2004 Jun;187(2):279-88.

### Fibrillization of alpha-synuclein and tau in familial Parkinson's disease caused by the A53T alpha-synuclein mutation.

Kotzbauer PT, Giasson BI, Kravitz AV, Golbe LI, Mark MH, Trojanowski JQ, Lee VM.

Center for Neurodegenerative Disease Research, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA 19104, USA. kotzbaue@mail.med.upenn.edu

Mutations in the alpha-synuclein (alpha-syn) gene are responsible for a rare familial parkinsonism syndrome, a finding that has led to extensive characterization of altered alpha-syn structure in sporadic Parkinson's disease (PD) and other neurodegenerative disorders. We report here the immunohistochemical, biochemical and ultrastructural characterization of alpha-syn neuropathology in a case of familial PD with the A53T alpha-syn gene mutation. Insoluble filamentous alpha-syn lesions were detected in almost all brain regions examined and as in sporadic PD, we observed the accumulation of insoluble nitrated alpha-syn in this familial disorder. Significant accumulations of filamentous insoluble tau protein also were detected in some brain regions of this patient, suggesting a role for A53T mutant alpha-syn in tau fibrillization. Indeed, in vitro studies of tau and alpha-syn fibrillization showed that the A53T mutation accelerated alpha-syn fibril formation, initiated tau assembly into filaments and synergistically enhanced fibrillization of both tau and alpha-syn. Our data implicate fibrillization of alpha-syn and tau in the pathogenesis of PD, and suggest that distinct amyloidogenic proteins may cross-seed each other in neurodegenerative diseases.

PMID: 15144854 [PubMed - indexed for MEDLINE]

[Publication Types, MeSH Terms, Substances](#)

[Link Out](#)

**ELSEVIER**  
FULL-TEXT ARTICLE

#### Related articles

- Human alpha-synuclein-harboring familial Parkinson's disease-linked Ala-53[Proc Natl Acad Sci U S A. 2002]
- Initiation and synergistic fibrillization of tau and alpha-synuclein.[Science. 2003]
- Fibrils formed in vitro from alpha-synuclein and two mutant forms linked to Parkinson's[Biochemistry. 2000]
- Review From genetics to pathology: tau and alpha-synuclein at[Philos Trans R Soc Lond B Biol Sci. 2001]
- Review Filamentous nerve cell inclusions in neurodegen[Philos Trans R Soc Lond B Biol Sci. 1999]

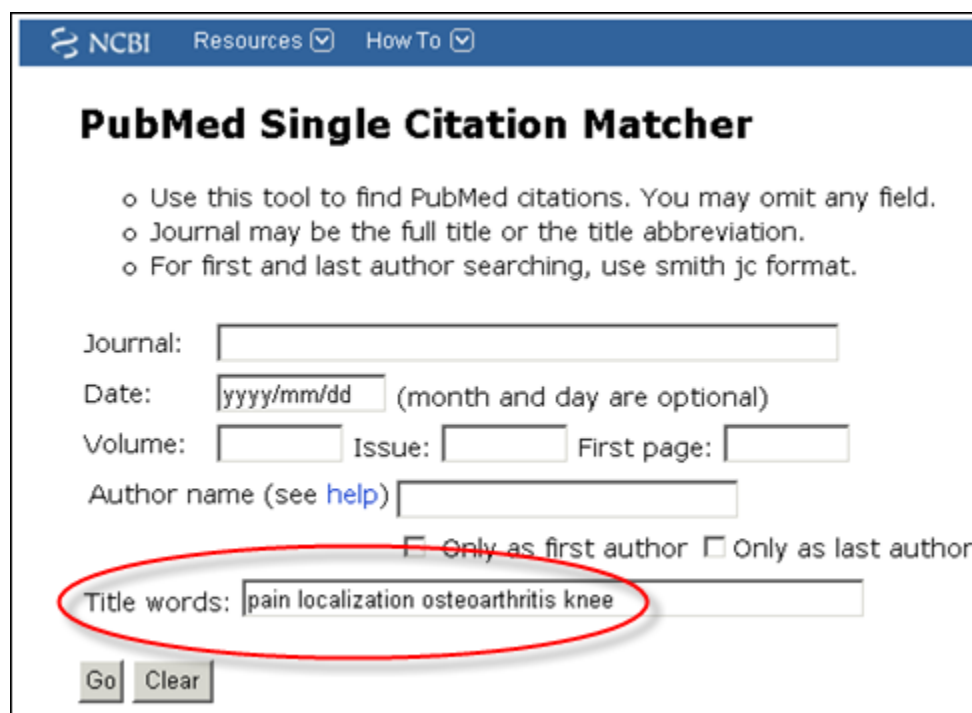
> See reviews... | > See all...

#### Cited by 4 PubMed Central articles

- Physiological and Pathological Role of Alpha-synuclein in Parkinson's Disease Through Iron[Int J Mol Sci. 2009]
- Clinical, neuropathological and genotypic variability in SNCA A53T familial Parkinson[Acta Neuropathol. 2008]
- Disrupted membrane homeostasis and accumulation of ubiquitinated proteins in a mouse[Am J Pathol. 2008]

> See all...

**Example:** You are looking for the citation for an article entitled, "Where does it hurt? Pain localization in osteoarthritis in the knee."



NCBI Resources How To

## PubMed Single Citation Matcher

- o Use this tool to find PubMed citations. You may omit any field.
- o Journal may be the full title or the title abbreviation.
- o For first and last author searching, use smith jc format.

Journal:

Date:  (month and day are optional)

Volume:  Issue:  First page:

Author name (see [help](#))

☐ Only as first author ☐ Only as last author

Title words:

Type in significant title words.

Click the Go button.

### Result:

[Display Settings](#): ☒ Abstract [Send to](#): ☐

Osteoarthritis Cartilage. 1998 Sep;6(5):318-23.

**Where does it hurt? Pain localization in osteoarthritis of the knee.**

Creamer P, Lethbridge-Ceju M, Hochberg MC.

Division of Rheumatology and Clinical Immunology, University of Maryland School of Medicine, Baltimore 21201, USA.  
pcreamer@umabnet.ab.umd.edu

OBJECTIVE: To identify the most common sites of pain in symptomatic knee osteoarthritis (OA) and to investigate clinical, radiographic and psychosocial associations of pain occurring in different locations. DESIGN: Sixty-eight outpatients with knee OA were interviewed in detail about their knee pain. Location of pain was recorded on a standard drawing of the knee. Validated instruments were used to measure pain severity, function, depression, anxiety, quality of life, fatigue, helplessness, self efficacy. Pain threshold was measured by dolorimetry and a knee examination performed. Radiographs (anterioposterior and lateral) were viewed if available. RESULTS: Most (85.3%) patients reported either 'generalized' (N = 35, 51.5%) or 'medial' (N = 23, 33.8%) knee pain. There were no differences between groups in pain severity, demographic or psychosocial variables, pain threshold or radiographic location or severity. However, function was significantly worse in the 'generalized' group (WOMAC function score 48.9 +/- 20.8 vs 34.2 +/- 22.3; P = 0.01): this remained significant after adjustment for potential confounding factors. The difference in function was most marked for activities involving knee bending. Early morning stiffness was also greater in the generalized group. CONCLUSIONS: Knee pain is not the same in all individuals with knee OA, confirming the heterogeneity of the condition. Location of pain is usually either generalized or medial. Patients with these patterns do not differ in demographic, radiographic or psychosocial variables but important differences in functional ability can be detected, suggesting differences in the underlying causes of pain and disability between the two groups.

PMD: 10197166 [PubMed - indexed for MEDLINE]

[+ Publication Types, MeSH Terms](#)

[+ LinkOut](#)

## Using Search Tags -- Search Field Descriptions

- Search fields can be specified using PubMed's search field tags. A list of the field names and searching information is found in PubMed Help: Search Field Descriptions and Tags ([http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search\\_Field\\_Descr](http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search_Field_Descr)). Not all searchable fields are included in this workbook section.
- For further information on the data found in the fields found on the MEDLINE display format, see MEDLINE®/PubMed® Data Element (Field) Descriptions (<http://www.nlm.nih.gov/bsd/mms/medlineelements.html>)

### Rules

- Each search term should be followed with the appropriate search field tag, which indicates which field will be searched. The search field tag must follow the term.

Correct entry:           aromatherapy [mh]

Incorrect entry:       [mh] aromatherapy

- Search field tags must be enclosed in **square brackets**.
- Case and spacing do not matter: ice [mh] = Ice[mh] = ICE [MH]



Terms entered with a search tag (e.g., [mh]; [majr]; [tw]) will not generate the “Did you mean” message (PubMed’s spell check feature).

## MeSH headings [mh]

- MeSH headings can be searched using two search field tags:
  - [mh]           to search a MeSH heading
  - [majr]       to search a MeSH heading that is a major topic of an article
- PubMed **automatically** searches the MeSH heading as well as the more specific terms beneath that heading in the MeSH hierarchy; i.e., **the term is exploded**.
- To turn off automatic explosion of MeSH headings, use one of the following tags:  
[mh:noexp] or [majr:noexp]

**Example:**       *thromboembolism [majr:noexp]*



Alternatively, consider using the “Do not explode” selection from the Detailed Display in the MeSH Database.



Searching with MeSH headings will exclude in process and publisher-supplied citations, as they are not indexed with MeSH.

## Subheadings [sh]

- You can directly attach subheadings to MeSH headings using the format MeSH heading/subheading.
- Two letter abbreviations for subheadings or the full subheading name may be used.

**Examples:**     *thromboembolism/pc*  
                  *thromboembolism/prevention and control*  
                  *toes/in [majr]*  
                  *toes/injuries [majr]*

- Only one subheading may be attached to a MeSH heading at a time. To attach multiple subheadings, combine each MeSH/subheading combination with the OR connector or use the MeSH Browser.

**Example:**     *thromboembolism/pc [majr] OR thromboembolism/di [majr]*

- For a MeSH/subheading combination, PubMed always explodes the MeSH term and also searches the subheading and its grouping if there is one.

In the example below, the subheading therapy or members of the therapy grouping (e.g., diet therapy) will be attached to the MeSH term (hypertension) or one of its indentions (e.g., hypertension, malignant).

**Example:**     *hypertension/th*

Hypertension with its indentions:

**Hypertension**  
[Hypertension, Malignant](#)  
[Hypertension, Pregnancy-Induced](#)  
[Hypertension, Renal](#)  
[Hypertension, Renovascular](#)

Subheading grouping for therapy:

**therapy**  
diet therapy  
drug therapy  
nursing  
prevention and control  
radiotherapy  
rehabilitation  
surgery  
transplantation



A list of subheadings and subheading groupings appears in PubMed's Help.



To **turn off both** the MeSH heading explosion and subheading groupings, you would enter:

hypertension/th [mh:noexp]

hypertension/th [majr:noexp]

These search for **only** the subheading therapy attached to **only** the MeSH term hypertension (with “majr,” only as the main point).

- You may also choose to “free-float” a subheading with a MeSH heading using the Boolean AND and the subheading field tag of [sh]. This is typically done when you want to search for a subheading that cannot be applied to the MeSH heading you are also searching.

**Example:** *hypertension [mh] AND toxicity [sh]*

To **turn off the subheading grouping**, use the tag [sh:noexp]. You may only do this when “free-floating” a subheading.

## Text Words [tw]

Terms or numbers that are searched with the Text Words [tw] field tag will be searched in the following fields:

- Title
- Abstract
- MeSH headings, Subheadings, Publication Types (includes single words and phrases)
- Other Terms field
- Chemical Names of Substances
- Secondary Source Identifier (The SI field identifies other data sources, databanks and accession numbers of molecular sequences discussed in MEDLINE articles.)
- Personal Name as Subject



## Corporate Author [cn]

- Use the [cn] tag to search for corporate authorship of an article. Search the whole name or individual words from the name.

**Examples:**     *american dental association [cn]*  
                       *american [cn] AND dental [cn] AND association [cn]*



PubMed.gov  
 U.S. National Library of Medicine  
 National Institutes of Health

Search: PubMed  
 american dental association [cn]

Display Settings: ☒ Summary, 20 per page, Sorted by Recently Added  
 Send to: ☐

Results: 1 to 20 of 61  
 << First < Prev Page 1 Next > Last >>

- ☐ [How can I ethically handle referrals to a specialist against whom there are allegations of unethical behavior?](#)  
 American Dental Association Council on Ethics, Bylaws and Judicial Affairs (CEBJA); Journal of the American Dental Association.  
 J Am Dent Assoc. 2009 Aug;140(8):1042-3. No abstract available.  
 PMID: 19654260 [PubMed - in process]  
[Related articles](#)
- ☐ [For the dental patient. Osteoporosis medications and oral health.](#)  
 American Dental Association Division of Science.  
 J Am Dent Assoc. 2009 Jun;140(6):812. No abstract available.  
 PMID: 19491171 [PubMed - in process]  
[Related articles](#)
- ☐ [Managing clinical risk: right person, right care, right time.](#)  
 Council on Dental Practice, American Dental Association, Graham FJ.  
 Dent Clin North Am. 2009 Jul;53(3):511-22.  
 PMID: 19482126 [PubMed - indexed for MEDLINE]  
[Related articles](#)
- ☐ [The U.S. approach to dental emergency preparedness and disaster response: American Dental Association Council on Dental Practice; American Dental Association Council on Government Affairs.](#)  
 American Dental Association Council on Dental Practice; American Dental Association Council on Government Affairs.  
 J Am Dent Assoc. 2009 May;140(5):546-7. No abstract available.

From May 2006 forward, corporate authors are displayed in the order found in the byline of the published article. From 2000 – April 2006, corporate authors are always displayed last in the list of authors.



This field was added in 2001; however this field may be added to some older records retrospectively. Citations indexed pre-2000 and some citations indexed in 2000-2001 display corporate authors at the end of the title field. For comprehensive searches, consider including terms and/or words searched in the title field.

**Example:**     *american dental association [cn] OR*  
                       *american dental association [ti]*



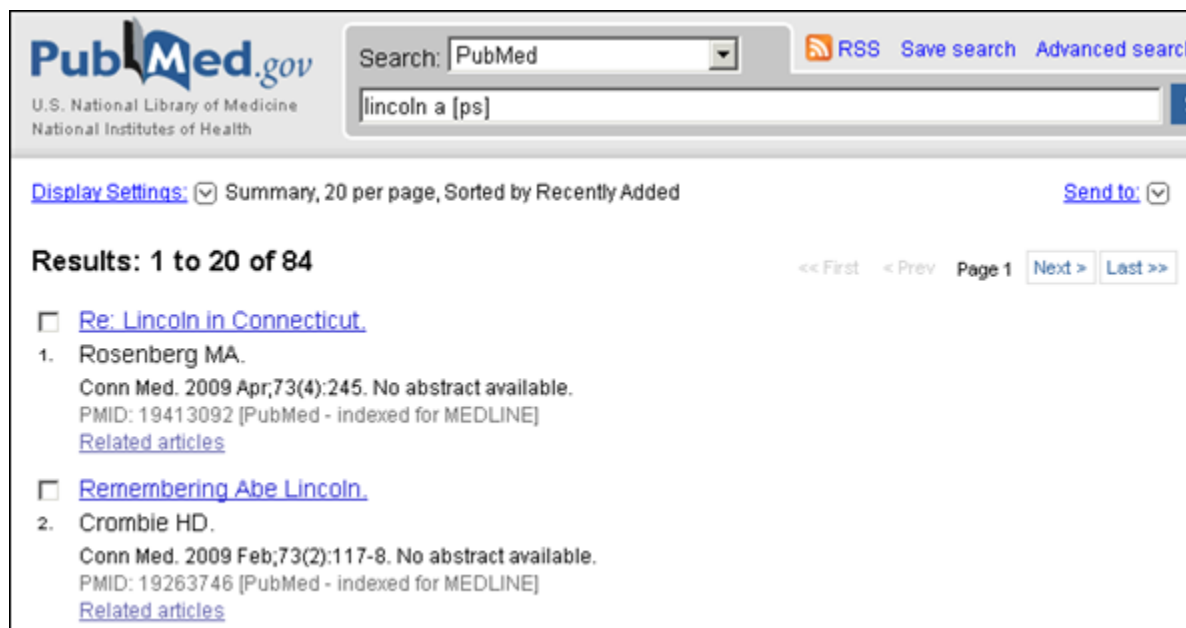
## Personal Name as Subject [ps]

- Use the [ps] tag to search for citations to articles about a named individual. The name is searched in the conventional author searching format: lastname + initial(s)



The Personal Name as Subject field is *not* available from the Search Field pull-down menus on the Advanced Search screen.

**Example:**      *lincoln a [ps]*



PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed  
RSS Save search Advanced search

lincoln a [ps]

Display Settings: Summary, 20 per page, Sorted by Recently Added Send to:

Results: 1 to 20 of 84

<< First < Prev Page 1 Next > Last >>

☐ [Re: Lincoln in Connecticut.](#)  
1. Rosenberg MA.  
Conn Med. 2009 Apr;73(4):245. No abstract available.  
PMID: 19413092 [PubMed - indexed for MEDLINE]  
[Related articles](#)

☐ [Remembering Abe Lincoln.](#)  
2. Crombie HD.  
Conn Med. 2009 Feb;73(2):117-8. No abstract available.  
PMID: 19263746 [PubMed - indexed for MEDLINE]  
[Related articles](#)

## Date Ranging

- The colon (:) is used between ranging values.
- To search on Publication Date from 1993 to 1997, enter:

1993:1997 [dp]

- To search on a date, use the format YYYY/MM/DD



Use the Single Citation Matcher (see page 81) for a fill-in-the-blank Date searching option.

## Place of Publication [pl]

- This field indicates the cited journal's country of publication.
- Use the [pl] tag.

**Example:**      *aids AND nigeria [pl]*



Geographic Place of Publication regions are not searchable. In order to retrieve records for all countries in a region (e.g., North America), it is necessary to OR together the countries of interest.

## Secondary Source Identifier [si]

- Identifies a secondary source that supplies information, e.g., other data sources, databanks and accession numbers of molecular sequences

### Examples of Data Sources:

GenBank

GEO (NLM's Gene Expression Omnibus) – beginning in February 2006

ClinicalTrials.gov identifier numbers – beginning in July 2005

International Standard Randomised Controlled Trial Number (ISRCTN) – beginning in mid-2006)

Reference Sequence (RefSeq) collection accession numbers

PubChem databases identifiers – beginning in January 2007

- The field is composed of a source followed by a slash followed by an accession number.
- Use the [si] search tag.

### Examples:

*genbank/af113832 [si]*

*clinicaltrials.gov/nct00000419 [si]*

*clinicaltrials.gov [si]*

*clinicaltrials.gov [si]*

## Unique Identifier Searching [pmid]

- To search using the PubMed Unique Identifier (PMID), type in the number with or without the search field tag [pmid].

**Example:** 11073054

- You can search for several Unique Identifier numbers by entering each number in the search box separated by a space. PubMed will OR them together. Do *not* enter the OR connector.

**Example:** 7715939 11073054

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed  
RSS Save search Advanced search

7715939 11073054[uid]

Display Settings: ☒ Summary, Sorted by Recently Added Send to: ☒

Results: 2

☐ [Munchausen syndrome by phone.](#)  
1. Reuber M, Zeidler M, Chataway J, Sadler M.  
Lancet. 2000 Oct 14;356(9238):1358. No abstract available.  
PMID: 11073054 [PubMed - indexed for MEDLINE]  
[Related articles](#)

☐ [The role of the basal ganglia in nociception and pain.](#)  
2. Chudler EH, Dong WK.  
Pain. 1995 Jan;60(1):3-38. Review.  
PMID: 7715939 [PubMed - indexed for MEDLINE]  
[Related articles](#)

Unique Identifiers  
as entered in the  
search box.

PubMed finds the 2  
citations.



To find the PubMed Central unique identifier (PMCID), see the MEDLINE or Abstract format for the record in PubMed, or use the PMID: PMCID Converter at <http://www.ncbi.nlm.nih.gov/sites/pmctopmid>

## Affiliation [ad]

- May include the institutional affiliation and address (including e-mail address) of the *first* author of the article as it appears in the journal.
- Use the [ad] search tag.
- This field can be used to search for work done at specific institutions.
- The data is how it appears in the original journal article. It is not standardized, therefore the same institution may appear in variant forms.

**Example:** cleveland [ad] AND clinic [ad]

## Grant Number [gr]

- Research grant numbers, contract numbers, or both that designate financial support by:
  - an agency of the US PHS (Public Health Service)
  - the Howard Hughes Medical Institute, or
  - eight funding sources from the United Kingdom
  - Canadian Institutes of Health Research
- For Public Health Services agencies, the number is followed by the Institute acronym; followed by the agency's hierarchical structure from lower to higher entity, when known; and then followed by the country name.

**Examples:** LM05545/LM/NLM NIH HHS/United States  
CA47147/CA/NCI NIH HHS/United States

- For other funding organizations, the number is followed by the name of the organization; followed by the country name.

**Examples:** GR072308/Wellcome Trust/United Kingdom  
066866/Wellcome Trust/United Kingdom  
Howard Hughes Medical Institute/United States

- Use the [gr] search tag.

**Example:** *lm05545/lm/nlm nih hhs/united states [gr]*

The four pieces of the grant number (e.g., LM05545 – number; LM – acronym; NLM NIH HHS – parts of, or the entire string of the agency's hierarchical structure; and funding country) are each individually searchable using the [gr] tag.

**Examples:** *lm05545 [gr]*      *wellcome trust [gr]*  
*nlm [gr]*      *united kingdom [gr]*



PubMed's online Help links to a Web page detailing Grant Number Information Found in the GR Field in MEDLINE/PubMed ([http://www.nlm.nih.gov/bsd/grant\\_acronym.html](http://www.nlm.nih.gov/bsd/grant_acronym.html)).

## Journals Database

The PubMed Journals database allows you to look up information about a PubMed journal and search for that title. You can search for a journal using:

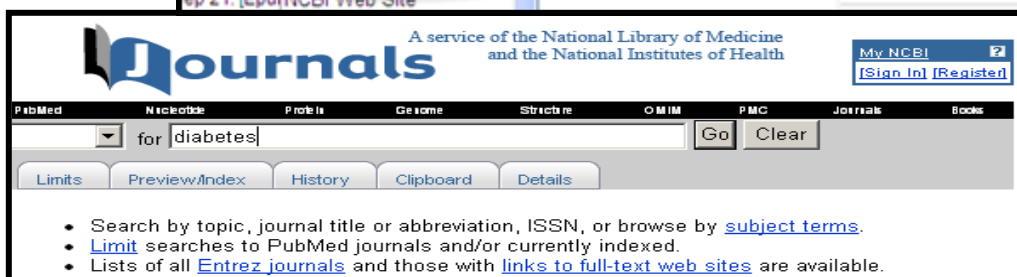
- journal title
- MEDLINE/PubMed title abbreviation
- NLM ID (NLM's unique journal identifier)
- ISO (International Organization for Standardization) abbreviation
- print and electronic International Standard Serial Numbers (pISSNs and eISSNs)
- subject terms (see page 93 of this workbook)

### How to get there:

- Click on Journals links from the bottom of the Advanced Search screen; click on Journals Database link from PubMed's homepage; or click on Journals from the database selection menu and use the search box:

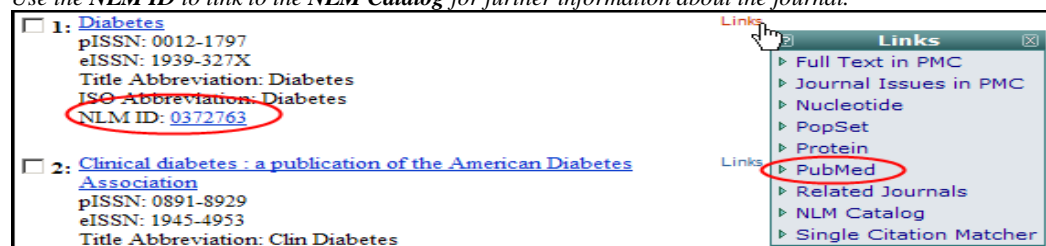


Type your term(s) in the search box.



### Result:

Use the **NLM ID** to link to the **NLM Catalog** for further information about the journal.



Use the **PubMed** link from the **Links** pull-down to retrieve citations for an individual journal in PubMed.



Retrieval display order is alphabetical, except if term has an exact match, which will display first.

Click on the hyperlinked journal title or choose the Full display format to see more information about the title:

☐ 1:
 

**Title:** Diabetes [Links](#)

**ISSN:** 0012-1797 (Print)  
1939-327X (Electronic)

**Title Abbreviation:** Diabetes

**ISO Abbreviation:** Diabetes

**Publication Start Year:** 1952

**Current Indexing Status:** Currently indexed for MEDLINE.

**Current Subset:** Core clinical journals (AIM); Index Medicus

**Version Currently Indexed:** Electronic

**Publisher:** American Diabetes Association

**Continuation Notes:** Formed by the union of: Proceedings of the American Diabetes Association, and: Diabetes abstracts.

**Acid-Free:** Some or all issues printed on acid-free paper.

**Language:** English

**Place of Publication:** United States

**Subject Term(s):** Endocrinology

**NLM ID:** [0372763](#)

### Limit to currently indexed titles, by language or by subset

Click on Limits tab.

Search  for

Use the checkbox to limit your search to currently indexed MEDLINE journal titles or other criteria.

Limit your search by any of the following criteria:

**Languages**

☐ English

☐ Chinese

☐ French

☐ German

☐ Italian

☐ Japanese

☐ Latin

☐ Russian

☐ Spanish

[More Languages](#)

**Current Subsets**

☐ Only PubMed Journals

☐ Currently indexed in MEDLINE

☐ PubMed Central Journals

☐ PubMed Central Forthcoming Journals

**Other Subsets for Currently Indexed Journals**

☐ Consumer Health Journals

☐ Core Clinical Journals (AIM)

☐ Dental Journals

☐ Index Medicus Journals (IM)

☐ Journals Indexed from the Electronic

**Search Field**



The Journals database includes journals in *all* Entrez databases (e.g., PubMed, Nucleotide, Protein). Use the **Only PubMed journals** option on the Limits page to limit to journals in PubMed.

## Subject Term [st]

- Subject terms are assigned by NLM to describe the overall scope of MEDLINE-indexed journals.
- Subject terms will display in the Full display format.
- Use the [st] tag.

**Example:** *pediatrics* [st]



Search Tip:

Searching for non-tagged terms, e.g., pediatrics in the Journals database, will retrieve all journals that include the word pediatrics in the title as well as journals with the Subject Term, Pediatrics



Take Note:

The complete list of terms is available at the Journal Subject Terms Web page (<http://www.nlm.nih.gov/bsd/journals/subjects.html>).

## Building a PubMed query for multiple journals



Click in the **checkbox** to the left of desired journal title.

Choose **Search Box with OR** from the Send to menu.

Once finished building your search, click **Search PubMed** button.



Search Tip:

Use Save Search and My NCBI to facilitate the task of limiting searches to a specific group of journals.



Quick  
Tour

See the **E-mail Alerts for Articles from Your Favorite Journals** Quick Tour at <http://www.nlm.nih.gov/bsd/disted/pubmed.html>.

## Journals Lists

- On the Journals database screen, click on **links to full-text web sites** for a list of full-text journals available on the Web to which PubMed is currently linked.



Some journals may require that you register, subscribe, or pay a fee in order to view the full-text of an article.

Contact the journal publishers as noted on their individual Web sites for specific access information.

- Click on **Entrez journals** to FTP a list of all journals that are included in PubMed in the GNU Zip, Uncompressed, UNIX Compress, or PKZIP format.



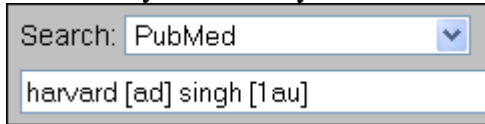
## Practice Exercises: Search Tags

Use search field tags when doing these exercises. Remember you can use the History feature to obtain search statement numbers to combine searches.

1. Find references to articles written by the author Singh who was affiliated with Harvard at the time of publication.  
(Notice that you will only retrieve affiliation information for the first author.)
2. Find references to articles about Winston Churchill.

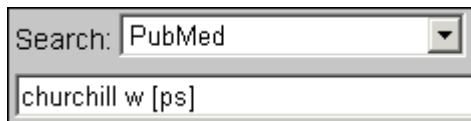
**Suggested Answers: Search Tags**

1. Find references to articles written by the author Singh who is affiliated with Harvard.  
(Notice that you will only retrieve affiliation information for the first author.)



A screenshot of a PubMed search interface. It features a 'Search:' label followed by a dropdown menu currently set to 'PubMed'. Below this is a text input field containing the search tag 'harvard [ad] singh [1au]'.

2. Find references to articles about Winston Churchill.



A screenshot of a PubMed search interface. It features a 'Search:' label followed by a dropdown menu currently set to 'PubMed'. Below this is a text input field containing the search tag 'churchill w [ps]'.

## Managing the Results

### Display Settings

The **Display Settings** menu allows the user to select record display format, number of items per page, and sort order.



### Format

#### Summary Format

Multiple PubMed citations are initially displayed in the **Summary** format.

<a href="#">Cell-cycle checkpoints and cancer.</a> Kastan MB, Bartek J. Nature. 2004 Nov 18;432(7015):316-23. Review. PMID: 15549093 [PubMed - indexed for MEDLINE] <a href="#">Related articles</a>	<a href="#">Ocular and systemic autoimmunity after successful tumor-infiltrating lymphocyte immunotherapy for recurrent, metastatic melanoma.</a> Yeh S, Karne NK, Kerkar SP, Heller CK, Palmer DC, Johnson LA, Li Z, Bishop RJ, Wong WT, Sherry RM, Yang JC, Dudley ME, Restifo NP, Rosenberg SA, Nussenblatt RB. Ophthalmology. 2009 May;116(5):981-989.e1. PMID: 19410956 [PubMed - indexed for MEDLINE] <a href="#">Related articles</a> <a href="#">Free article</a>
--	---

The Summary format may include the following:

- **Title of the article:** The article title serves as the link to the full display for the record (Abstract format). Most foreign language titles will be translated into English and placed within brackets.
- **Author Name(s):** Author names are displayed and are links to a PubMed search for that author's works
- **Corporate Author:** Identifies the corporate authorship of an article.
- **Source:** Includes journal title abbreviation, date of publication, volume, issue, and pagination. A mouseover of journal title abbreviation displays the full journal title.
- PubMed Unique Identifier (PMID).
- A status tag: [PubMed - as supplied by publisher], [PubMed - in process], [PubMed - indexed for MEDLINE], [PubMed - OLDMEDLINE] or [PubMed]

- **Related Articles:** Link to the Related Articles set of citations.
- **Free article:** Appears when *free* full text is available.
- May also include language (for non-English articles) and Publication Type if the article is a review or retracted publication. Articles without abstracts will display the notation: "No abstract available".
- Annotations to associated citations (e.g., Errata).

## Abstract Format

A single citation will be displayed in Abstract format by default.

Display Settings: ☐ Abstract Send to: ☐

Nature. 2004 Nov 18;432(7015):316-23.

**Cell-cycle checkpoints and cancer.**

Kastan MB, Bartek J.

Department of Hematology-Oncology, St Jude Children's Research Hospital, 332 North Lauderdale Street, Memphis, Tennessee 38105, USA. michael.kastan@stjude.org

All life on earth must cope with constant exposure to DNA-damaging agents such as the Sun's radiation. Highly conserved DNA-repair and cell-cycle checkpoint pathways allow cells to deal with both endogenous and exogenous sources of DNA damage. How much an individual is exposed to these agents and how their cells respond to DNA damage are critical determinants of whether that individual will develop cancer. These cellular responses are also important for determining toxicities and responses to current cancer therapies, most of which target the DNA.

PMID: 15549093 [PubMed - indexed for MEDLINE]

[+ Publication Types, MeSH Terms](#)

[+ LinkOut](#)

**Related articles**

- [Review](#) Genetic instability in cancer cells by impaired cell cycle checkpoints. [Cancer Sci. 2006]
- [Review](#) DNA damage-dependent cell cycle checkpoints and genomic stability [DNA Cell Biol. 2006]
- [Review](#) DNA damage checkpoints and cancer. [J Mol Histol. 2006]
- [Review](#) Sensing, signaling, and responding to DNA damage: organization of the che [J Cell Biochem. 2005]
- [Review](#) A concise review of DNA damage checkpoints and repair [Cardiovasc Revasc Med. 2006]

[» See reviews...](#) [» See all...](#)

**Cited by over 100 PubMed Central articles**

- [Colorectal cancer is a paracrine deficiency syndrome amenable to oral hormone replac \[Clin Transl Sci. 2008\]](#)
- [Regulation of DNA replication by the S-phase DNA](#)

The Abstract format may include the following information:

- **Source** (journal title abbreviation - mouseover for full title and link for search options; date of publication; volume; issue; and pagination)
- **Title**
- On non-English language articles, [Article in language] tag
- **Author(s)** with author names displayed as "search links" to author searches.
- **Corporate Author**
- **Affiliation** (address) of first author
- **Abstract** (if present) from published article
- **Annotations** to associated citations (e.g., errata)
- **PMID**
- **Status tag**
- Supplemental Information (expand the section to view):
  - **Publication Types** (except for "Journal Article") with search links
  - **MeSH Terms** with search links (if present)
  - **Personal Name as Subject** (if present)
  - (Chemical) **Substances** (if present) with search links
  - **Grant numbers** (if present) with search links
  - ClinicalTrials.gov identifier number with search links (if present)
- Links to external resources (including **LinkOut**, see page 119)
- Icons with link to full text (if present)
- **Related articles** (if viewing a single citation)

☐ Publication Types, MeSH Terms

**Publication Types:**

- [Research Support, Non-U.S. Govt](#)
- [Research Support, U.S. Govt, P.H.S.](#)
- [Review](#)

**MeSH Terms:**

- [Animals](#)
- [Cell Cycle\\*](#)
- [DNA Damage](#)
- [Humans](#)
- [Neoplasms/enzymology](#)
- [Neoplasms/metabolism\\*](#)
- [Neoplasms/pathology\\*](#)
- [Signal Transduction\\*](#)

## MEDLINE Format

Two- to four-character tagged field format displaying all fields of the PubMed record.

```
PMID- 15549093
OWN - NLM
STAT- MEDLINE
DA - 20041119
DCOM- 20041221
LR - 20061115
IS - 1476-4687 (Electronic)
IS - 1476-4687 (Linking)
VI - 432
IP - 7015
DP - 2004 Nov 18
TI - Cell-cycle checkpoints and cancer.
PG - 316-23
AB - All life on earth must cope with constant exposure to DNA-damaging agents such as
the Sun's radiation. Highly conserved DNA-repair and cell-cycle checkpoint
pathways allow cells to deal with both endogenous and exogenous sources of DNA
damage. How much an individual is exposed to these agents and how their cells
respond to DNA damage are critical determinants of whether that individual will
develop cancer. These cellular responses are also important for determining
toxicities and responses to current cancer therapies, most of which target the
DNA.
AD - Department of Hematology-Oncology, St Jude Children's Research Hospital, 332
North Lauderdale Street, Memphis, Tennessee 38105, USA. michael.kastan@stjude.org
FAU - Kastan, Michael B
AU - Kastan MB
FAU - Bartek, Jiri
AU - Bartek J
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PT - Research Support, U.S. Gov't, P.H.S.
PT - Review
PL - England
TA - Nature
JT - Nature
JID - 0410462
SB - IM
MH - Animals
MH - *Cell Cycle
MH - DNA Damage
MH - Humans
MH - Neoplasms/enzymology/*metabolism/*pathology
MH - *Signal Transduction
RF - 96
EDAT- 2004/11/19
MHDA- 2004/12/22
CRDT- 2004/11/19
AID - nature03097 [pii]
AID - 10.1038/nature03097 [doi]
PST - ppublish
SO - Nature. 2004 Nov 18;432(7015):316-23.
```



- Use Send to File (see page 101) to download using this format into reference management software
- For further information on the data found in the fields found on the MEDLINE display format, see MEDLINE®/PubMed® Data Element (Field) Descriptions (<http://www.nlm.nih.gov/bsd/mms/medlineelements.html>)

## Other Display Formats

- The **Summary (Text)** format is designed for reference lists. It includes the same information as the Summary display, with the addition of the PubMed Central ID (PMCID).
- The **Abstract (Text)** format includes the information in the fuller display with the exception of the supplemental data. It may be useful for copying, printing, saving to a file or e-mailing.
- Use the **PMID List** to store batches of IDs for later retrieval.

## Items per page

- PubMed initially displays search results in batches of 20 citations per page.
- Click on the **Display Settings** menu to select a different number.
- Click Apply
- PubMed redisplay the citations based on your selection.

[Display Settings:](#) Summary, 20 per page, Sorted by Recently Added

Format	Items per page	Sort by
<input checked="" type="radio"/> Summary	<input type="radio"/> 5	<input checked="" type="radio"/> Recently Added
<input type="radio"/> Summary (text)	<input type="radio"/> 10	<input type="radio"/> Pub Date
<input type="radio"/> Abstract	<input checked="" type="radio"/> 20	<input type="radio"/> First Author
<input type="radio"/> Abstract (text)	<input type="radio"/> 50	<input type="radio"/> Last Author
<input type="radio"/> MEDLINE	<input type="radio"/> 100	<input type="radio"/> Journal
<input type="radio"/> XML	<input type="radio"/> 200	<input type="radio"/> Title
<input type="radio"/> PMID List		

[Apply](#)

## Sort by

- PubMed initially displays search results by Recently Added
- To sort items by Publication date, First Author, Last Author, Journal or Title, select the field of interest in the **Display Settings** menu and click Apply.

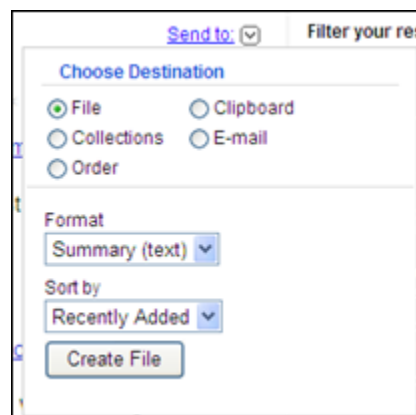
## Send to...

Select Send to: to send selected or all records in your results to a file, to My NCBI Collections, to order, to the Clipboard, or to e-mail.

The screenshot shows the PubMed.gov search results page. The search query is "cell cycle dna damage cancer signal transduction". The results are displayed in a list format. A red circle highlights the "Send to" dropdown menu, which is open and shows the following options: File, Clipboard, Collections, E-mail, and Order. The "Clipboard" option is selected. The page also shows the "Display Settings" menu set to "Summary, 20 per page, Sorted by Recently Added" and the "Filter your results" section.

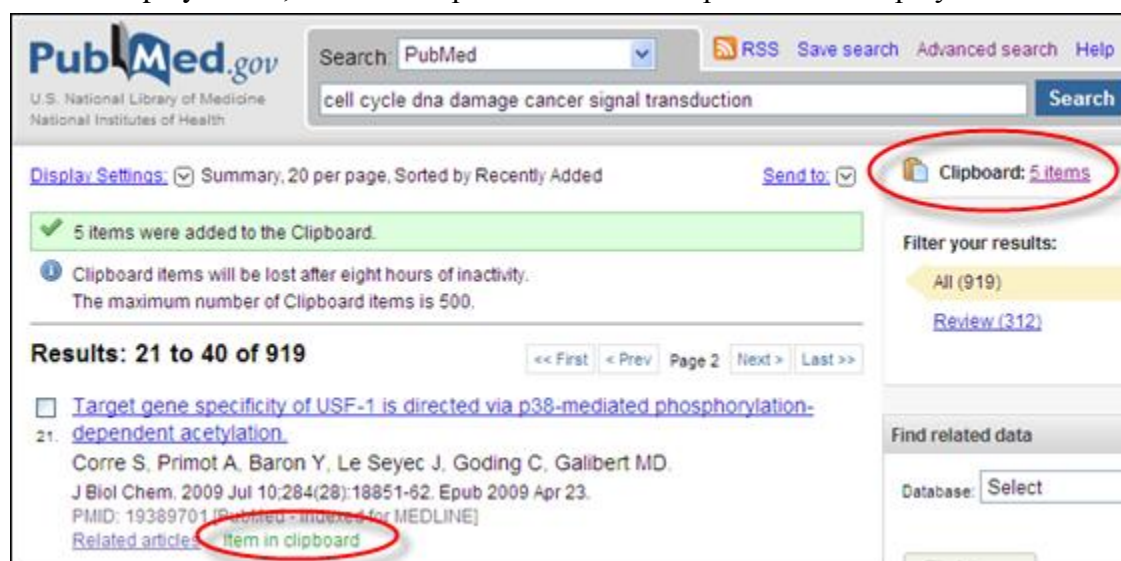
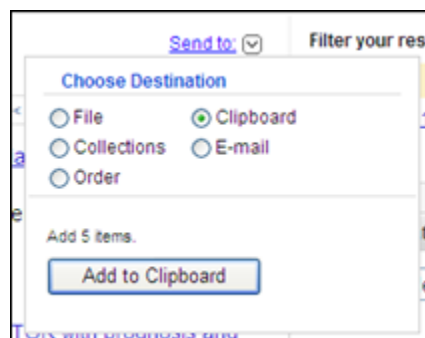
## Send to File

- To save and send your **entire set of search results** to a file, use the Send to: menu, select File, and select your formatting and sorting preferences
- To mark **selected citations** to save and send to a file, click on the check-box above the item number as you go through each page of your retrieval. After you have finished selecting citations, then select File from the Send to menu and select your preferences.
- Send to File with Summary (text) format displays the citations with Author names first followed by title.



## Send to Clipboard

- The Clipboard allows you to collect selected citations from one search or several searches that you may want to print, save, or order.
- The maximum number of items that can be placed in the Clipboard is **500**.
- To place an item in the Clipboard, click on the box above the citation and select **Clipboard** from the Send to menu.
- Once you have added a citation to the Clipboard, the item will display a note, "Item in Clipboard" and the Clipboard link displays below the search box.



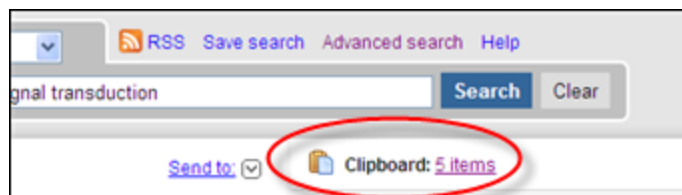
## Clipboard Tips:

- ✓ If you send items to the **Clipboard** without selecting citations using the check-box, PubMed will add up to 500 citations from your retrieval to the clipboard.
- ✓ The maximum number of items that can be added to the clipboard is 500.
- ✓ The clipboard will be lost after 8 hours of inactivity.



## Using the Clipboard

- To view the contents of our clipboard, click on Clipboard link in the right column of your search results:



You are directed to the Clipboard screen:



- You can use the same Display Settings and Send to: options with the citations in the Clipboard.

## Deleting citations from the Clipboard

- To delete citations on the Clipboard, click **Remove from clipboard** next to the item, or select the item(s), and click **Remove selected items**
- To empty the Clipboard, select **Remove all items**



Citations on the Clipboard may be incorporated into a search statement using #0. For example, limit the items on the Clipboard to English language citations using the following search:

#0 AND english [la]

This does not affect or replace the Clipboard contents.



## Send to E-mail

- Select E-mail from the Send to menu.
- Select your formatting and sorting preferences.
- Select the number to send (if sending more than the first 20 records).
- Select the citation number to start from (if sending in batches)
- Enter an e-mail address. Only one is permitted, to prevent spam.
- Add additional text if you wish.
- Click E-mail.

### E-mail Tips:

- ✓ You may E-mail up to 200 items.
- ✓ A default E-mail address may be stored via My NCBI User Preferences.

Send to Collections: See page 105

Send to Order: See page 120

**Choose Destination**

☐ File ☐ Clipboard  
☐ Collections ☒ E-mail  
☐ Order

Search: cell cycle AND tumor suppression AND cdk4

Format  
Abstract

Sort by  
Pub Date

Number to send  
50

Start from citation  
51

E-mail  
doctorpeabody@gmail.com

Additional text

E-mail

["SPAM" filtering software notice](#)

## My NCBI Collections



### My NCBI Features

- My Saved Data
  - Searches: save search strategies to get updates, including automatic e-mail updates.
  - Collections: save search results.
  - My Bibliography: collect citations for your publications.
- Search Filters: group your retrieval by topics of interest to you.
- Preferences: select highlighting and to expand the supplemental data in the Abstract display



If your Web browser is set to block pop-ups, you will need to allow pop-ups from NCBI Web pages to use My NCBI.

### Getting to My NCBI

- PubMed's banner will display links to My NCBI.
- The **My NCBI** link goes to the My NCBI home page.
- **Sign In** links to the Sign In page and to registration.

My NCBI | Sign In

### Registering for My NCBI

- To use My NCBI you need to register for an account.
- If you choose to include an e-mail address, you will receive a confirmation e-mail (see page 111 for details).

### Sign In:

#### Session-Only or Automatic

Check the "Keep me signed in" and/or "Remember my username" boxes if you are using your own computer to access My NCBI.

Click **About automatic sign in** for more information.

#### "Linked" Accounts

If you have an eRA Commons or NIH account, click on **See more sign in options for My NCBI partner organizations**. You may be able to use your NIH or eRA Commons credentials to sign into My NCBI.

The image shows a screenshot of the "Sign into My NCBI" login page. It features a light yellow background with a white border. On the left, there are input fields for "Username" and "Password", followed by checkboxes for "Keep me signed in" and "Remember my username". A green "Sign In" button is positioned below these fields. On the right side, there are four blue links: "Register for an account", "I forgot my username", "I forgot my password", and "About automatic sign in". At the bottom of the form, there is a blue link that says "See more sign in options for My NCBI partner organizations." with a small blue triangle icon to its left.

## Collections

- Use Collections to save search results within My NCBI.

### Create a Collection

*Step 1: Select search result items you wish to save*

*Step 2: Choose Collections from the Send to menu.*

*Step 3: Click Add to Collections*

*If you are not already signed into My NCBI, you will be prompted to do so.*



**Search Tip:**

If you do not select items, all items (up to 5000) will be saved to the collection you are creating.

*Step 4: Choose to create a new collection.*

*Rename your collection.*

*Click Save.*



**Take Note:**

The maximum number was increased to 5,000 from 500. If you have saved any Collections prior to February 2009, then these will remain with 500 as the maximum number unless you recreate the Collection again.

## Append to a collection

- Choose **Append to an existing collection** from the Save Collection pop-up window.
- Choose the collection to which you want to add items and click **OK**.

My NCBI Home > Saved Data > Collections

Save Collection

2 items from PubMed

What would you like to do?

☐ Create new collection

☒ Append to an existing collection

Choose a collection: Collections

Save Cancel

Collections

exercise vascular reactivity

Peabody Citations

phototherapy diabetic neuropathy

PAD exercise

exercise lipid metabolism



You can add up to a maximum of 5000 items to a collection.

## Edit a collection

From the My NCBI Collections page you may:

- Sort by column using the column name.
- View the collection in a PubMed results screen to print, save or e-mail.
- Edit collections
- Merge collections
- Delete collections

My NCBI Home > Saved Data > Collections

Collections

PubMed Collections

Name	Sharing	Last Modified	Items
<input type="checkbox"/> PAD exercise (Edit)	Public	4 months ago	18
<input type="checkbox"/> exercise vascular reactivity (Edit)	Private	7 days ago	8
<input type="checkbox"/> exercise lipid metabolism (Edit)	Private	last year	2
<input type="checkbox"/> phototherapy diabetic neuropathy (Edit)	Private	2 years ago	3
<input type="checkbox"/> Peabody Citations (Edit)	Private	7 days ago	9

Merge PubMed Collections Delete PubMed Collections

From the Edit Collection page you may:

- Delete items from the collection
- Rename the collection.
- View in PubMed
- Sort by publication date, first author or article title
- Access Collection Settings to change your collection to Public or Private

My NCBI Home > Saved Data > Collections

Edit Collection

Actions: Sort by:

Collection: PAD exercise (Public)

[Edit Collection Settings](#)

Page 1 of 1

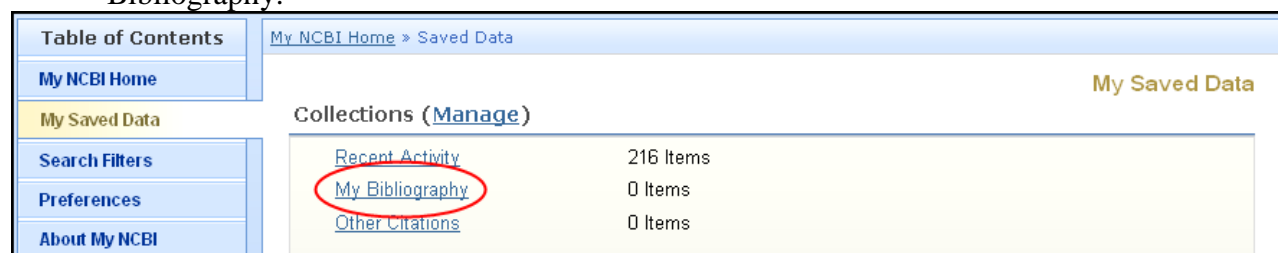
☐ 1: [Exercise for intermittent claudication.](#)  
Watson L et al. Cochrane Database Syst Rev, 2008. 18843614

## My Bibliography

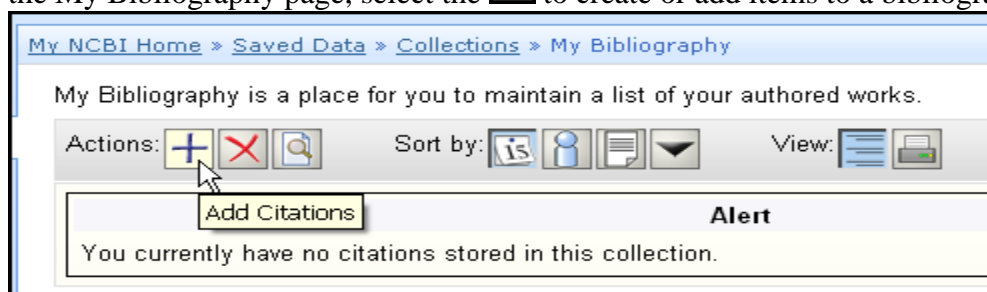
My Bibliography is designed to make it easier for authors to search and collect citations for their publications from PubMed. In addition, citations to journal articles not found in PubMed, books, meetings, etc. may be manually added.

### Create Your Bibliography

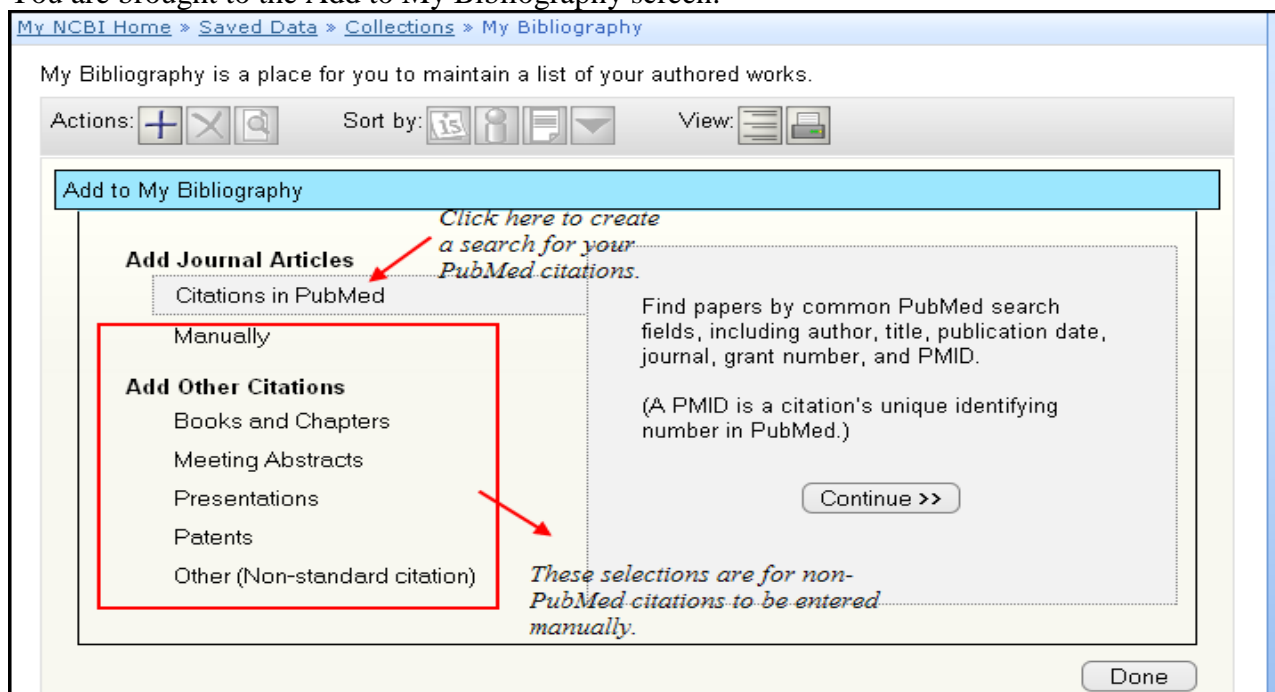
- In the My Saved Data section of My NCBI, under Collections, click on the link to My Bibliography:



- On the My Bibliography page, select the  to create or add items to a bibliography:



- You are brought to the Add to My Bibliography screen:



Create a search for your PubMed citations:

Enter your name in the **Author** search box.

If you have written under another name, select **Add Another Author**


Enter some **Title Words** to help differentiate your work from another author.

Show **All Citations** to create your bibliography

Click **Done**

Use the **+Add** button to select citations.

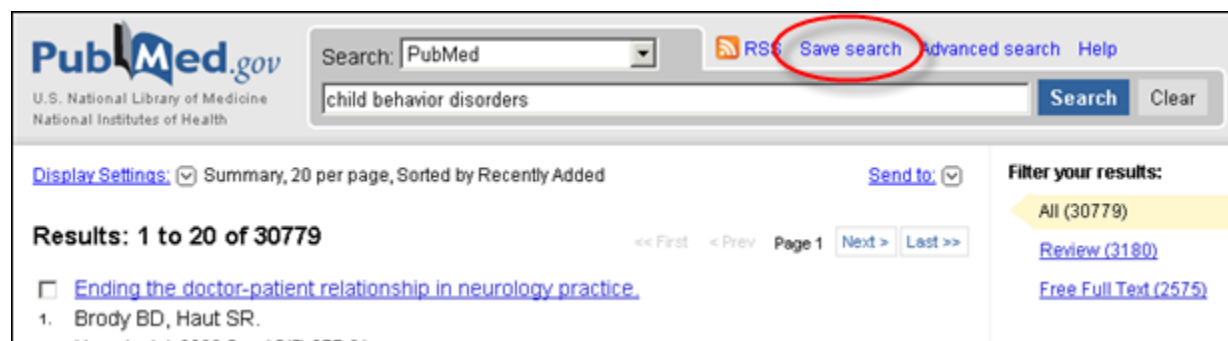
Click **Done**.

Your bibliography is created. You can add items to the bibliography by returning to Saved Data > My Bibliography and using the .

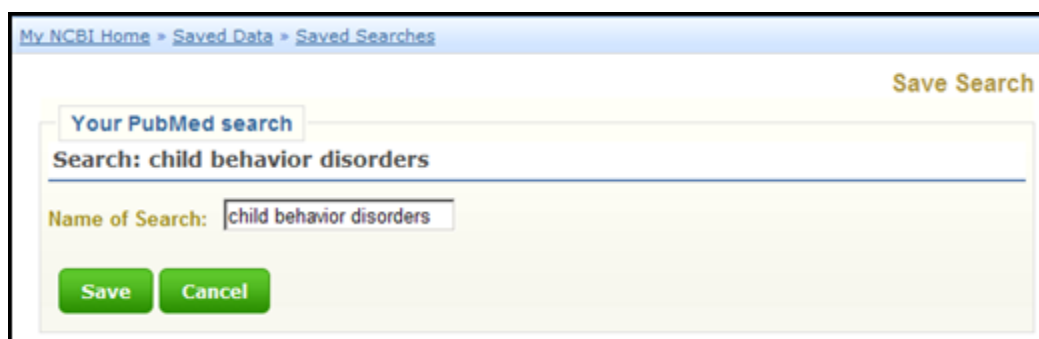
## Saving the Search

### Saving Search Strategies with My NCBI

- Run your PubMed search.
- From the Results page, click on the **Save Search** link above the search box.



- PubMed will open a separate window in your browser to start the saving process. (If you are not already signed into My NCBI, you will be prompted to do so).
  - Be aware that the default search name does not include any Boolean operators, search statement numbers or search tags, if entered. This name does not affect the strategy, so it is advisable to edit it to something short, yet meaningful.
- *You can edit the name of the search.*
  - *This name will be part of the Subject line of automatic e-mail updates.*
  - *Click Save.*



Your search strategy is saved and the Saved Search Settings Window is displayed (see next page).

## Setting Up Automatic Updating

Set up your updates using the Saved Search Settings page:

- *Modify the name of the search, if desired.*
- *Enter an **e-mail** address for the account if you haven't already.*
- *Select how often you want to get updates - monthly, weekly, or daily.*
- *Select the **format** (Summary, Abstract, etc.).*
- *Select the **Number of items** to be sent with each update. A link in the e-mail will take you to the total update results in PubMed.*
- *If you want to know when an update retrieved no citations, select **Send even when there aren't any new results**.*
- *The text box is a place to add a note. This text will display on each e-mail update as "Sender's message."*
- *Click Save.*

The screenshot shows the 'Saved Search Settings' page for a PubMed search. The breadcrumb trail at the top is 'My NCBI Home > Saved Data > Saved Searches'. The page title is 'Saved Search Settings'. The search name is 'Your PubMed search' and the search text is 'Search: child behavior disorders'. The 'Name of Search' field contains 'child behavior disorders'. The 'E-mail' field contains 'doctorpeabody@gmail.com'. The section 'Would you like e-mail updates of new search results?' has four radio button options: 'No thanks.' (selected), 'Yes, once a month.' (with a dropdown for 'the first Saturday'), 'Yes, once a week.' (with a dropdown for 'Saturday'), and 'Yes, every day.'. The 'Formats:' section has a 'Report format:' dropdown set to 'Summary'. The 'Number of items:' section has a 'Send at most:' dropdown set to '5 items' and a checkbox for 'Send even when there aren't any new results'. There is a text box for 'Any text you want to be added at the top of your e-mail (optional):'. A green 'Save' button is at the bottom left. At the bottom right, there is a link to 'Skip scheduling and return to your search, or proceed to manage your Saved Searches.'



## Partial e-mail update results:

Click on the word, “**here**” to view the complete results. For this example, to see all 7 citations.

This message contains My NCBI what's new results from the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM).  
Do not reply directly to this message.

**Sender's message:**

Sent on Friday, 2009 Jan 23  
Search **child behavior disorders**  
Click **here** to view complete results in PubMed. (Results may change over time.)  
To unsubscribe from these e-mail updates click [here](#).

---

PubMed Results

Items 1 -5 of 7

1: [\[Psychiatry in a humanitarian situation, a therapeutic nursery in Guatemala\]](#)  
Tavernier G, Baubet T, Pouts AL, Moro MR.  
Soins Psychiatr. 2008 Nov-Dec;(259):38-43. French. No abstract available.  
PMID: 19086478 [PubMed - indexed for MEDLINE]  
[Related Articles](#)

2: [\[Spontaneous imitation by children with autism during a repetitive musical play routine\]](#)  
Stephens CE.  
Autism. 2008 Nov;12(6):645-71.  
PMID: 19005033 [PubMed - indexed for MEDLINE]  
[Related Articles](#)

## Important Facts about the E-mail for My NCBI Account

- Each My NCBI account can have **only one** e-mail address that will be used for all automatic e-mail updates saved in that account.
- If, at a later time, you change the e-mail address for your account, the new e-mail address will be used for **all** automatic updates following confirmation (see below).
- To change the e-mail address on an account, go to **Preferences** on the My NCBI sidebar.



The address for PubMed's Send to E-mail feature *can* be changed for individual e-mails on the Send to E-mail page without affecting the e-mail address used for the My NCBI account.

## The Confirmation E-mail

- The first time an automatic e-mail update is created for an account, or if the e-mail is changed in User Preferences, a confirmation e-mail will be sent to that address.
- No automatic updates will be sent to an address until it has been confirmed.

## Manually Updating Searches

- To manually update a search, go to My Saved Data > Saved Searches > Manage in My NCBI.
- Check the box to the left of the search to be updated and click **Show What's New** at the bottom of the page.
- My NCBI will indicate if there are any new citations retrieved by the strategy since your last update.
- If you link to the results, i.e., complete the update, your saved search list will reflect the date and time of the update.

## About the Updates

- The update strategies used for My NCBI are detailed in PubMed's Help.
- New or modified searches can be generated no sooner than the next day. For example, this morning, you changed the frequency for an update from Monthly to Daily. The first update will be sent tomorrow.

## Additional Functions available from the Saved Searches page

*Saved searches can be run to retrieve total results, i.e., not limited to new citations. Click on the name of the search. (This will not affect future updates.)*

*Click on **Settings** to go to the Saved Search Settings page where you can make changes (e.g., to frequency or format of e-mail updates).*

*Hold your cursor over the data in the **Last Searched** column to show the date the last e-mail update was sent or manually updated.*

My NCBI Home > Saved Data > Saved Searches

**Saved Searches**

<input type="checkbox"/>	Name	Last Searched	Schedule
<input type="checkbox"/>	<a href="#">exercise lipid metabolism (Settings)</a>	2 months ago	none
<input type="checkbox"/>	<a href="#">gastroenterology journals (Settings)</a>	22 days ago	monthly
<input type="checkbox"/>	<a href="#">lipoproteins metabolic syndrome x (Settings)</a>	3 days ago	weekly
<input type="checkbox"/>	<a href="#">light therapy seasonal depression (Settings)</a>	yesterday	weekly
<input type="checkbox"/>	<a href="#">phototherapy diabetic neuropathy (Settings)</a>	yesterday	weekly
<input type="checkbox"/>	<a href="#">chocolate (Settings)</a>	yesterday	daily
<input type="checkbox"/>	<a href="#">torsion abnormality (Settings)</a>	yesterday	weekly

## Modifying a Strategy: Save a New One and Delete the Old

- Saved search strategies cannot be edited. To modify a strategy, re-save it with your changes.
- To delete a search, select the search using the check box and click on the **Delete PubMed Searches** button at the bottom of the page.

## Changing the E-mail Address for an Account

- **Preferences** is accessible via a link on the My NCBI sidebar. You can change the e-mail address for your My NCBI account here.
- Keep in mind, anytime you change the e-mail for an account, all automatic updates will be sent to that address following confirmation.

Table of Contents
My NCBI Home
My Saved Data
Search Filters
Preferences
About My NCBI

## RSS



RSS feeds bring content (like news items) from multiple online sources into one reader or Web page. The feeds are dynamically updated as new items are added from each source. An RSS reader is required and many are available to download free from the Web or incorporated into e-mail software. Each RSS reader behaves and displays data differently.

Select the  
RSS link

An options menu appears:

Change these selections if needed.

Click **Create RSS**

Drag the XML button to your feed reader OR Click the XML icon to obtain the URL from the address line.

Copy and paste the URL into the "subscribe" form in your RSS reader.

**NOTES**

## Practice Exercises: Managing the Results and Saving the Search

1. Create a My NCBI account and sign in (or sign in to your existing account).
2. Using the Limits screen, find English-language articles on clinical trials using light therapy to treat seasonal depressive disorder. Show all results in Abstract format on one page. Select three or four citations and save them in a Collection.
3. Save your light therapy search and set up weekly automatic updates in Abstract format.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Suggested Answers: Managing the Results and Saving the Search

See pages 104 and 109 for instructions on #1 and #3.

- Using the Limits screen, find English-language articles on clinical trials using light therapy to treat seasonal depression. Show all results in Abstract format on one page, sorted by publication date. Select three or four citations and save them in a Collection.

*Run a search for light therapy seasonal depression*

*Select Clinical Trial as Type of Article (publication type) and English as Language.*

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

light therapy seasonal depression **Search** **Clear**

### Limits

**Dates**

Published in the Last: Any date

**Type of Article**

- ☒ Clinical Trial
- ☐ Editorial
- ☐ Letter
- ☐ Meta-Analysis
- ☐ Practice Guideline

**Languages**

- ☒ English
- ☐ French
- ☐ German
- ☐ Italian
- ☐ Japanese

*Using the Display Settings menu:*

*Select Abstract display.*

*Change Items per page to 200.*

*Sort by Publication Date.*

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

light therapy seasonal depression **Search** **Clear**

**Display Settings:** ☒ Summary, 20 per page, Sorted by Recently Added [Send](#)

Format	Items per page	Sort by
<input type="radio"/> Summary	<input type="radio"/> 5	<input type="radio"/> Recently Added
<input type="radio"/> Summary (text)	<input type="radio"/> 10	<input checked="" type="radio"/> Pub Date
<input checked="" type="radio"/> Abstract	<input type="radio"/> 20	<input type="radio"/> First Author
<input type="radio"/> Abstract (text)	<input type="radio"/> 50	<input type="radio"/> Last Author
<input type="radio"/> MEDLINE	<input type="radio"/> 100	<input type="radio"/> Journal
<input type="radio"/> XML	<input checked="" type="radio"/> 200	<input type="radio"/> Title
<input type="radio"/> PMID List		

**Apply**

On results page:

Select citations of  
interest.

Select Send to  
Collections.

The screenshot shows the PubMed.gov search results page. At the top, the PubMed logo is on the left, and a search bar contains the text 'light therapy seasonal depression'. To the right of the search bar are links for 'RSS', 'Save search', and 'Advanced search'. Below the search bar, the text 'U.S. National Library of Medicine' and 'National Institutes of Health' is displayed. A 'Display Settings' link is followed by a dropdown menu showing 'Abstract, 200 per page, Sorted by Pub Date'. To the right of this are 'Send to' and 'Limits' links. The main results section shows 'Results: 168' and 'Selected: 3'. A single result is listed with a checkbox checked: 'Biol Psychiatry. 2009 Aug 1;66(3):253-8. Epub 2009 Jan 8.' The title of the article is 'Evidence of a biological effect of light therapy in patients with seasonal affective disorder.' The authors listed are 'Lavoie MP, Lam RW, Bouchard G, Sassequille A, Charron M, Filteau MJ, Hébert M.' and the institution is 'Centre de recherche Université Laval Robert-Giffard, Centre hospitalier de la Sagouine, Québec G1J 2G3, Canada.' A 'Choose Destination' dialog box is open over the first result, showing options: 'File', 'Clipboard', 'Collections' (selected), 'E-mail', and 'Order'. Below these options are the text 'Add 3 items.' and a button labeled 'Add to Collections'.

PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed  
light therapy seasonal depression

Display Settings: Abstract, 200 per page, Sorted by Pub Date  
Send to: Limits Act

Results: 168 Selected: 3

☒ Biol Psychiatry. 2009 Aug 1;66(3):253-8. Epub 2009 Jan 8.

1. **Evidence of a biological effect of light therapy in patients with seasonal affective disorder.**

Lavoie MP, Lam RW, Bouchard G, Sassequille A, Charron M, Filteau MJ, Hébert M.

Centre de recherche Université Laval Robert-Giffard, Centre hospitalier de la Sagouine, Québec G1J 2G3, Canada.

Choose Destination  
☐ File ☐ Clipboard  
☒ Collections ☐ E-mail  
☐ Order

Add 3 items.  
Add to Collections

**NOTES**



## Getting the Articles

PubMed does not include copies of journal articles. However, PubMed does offer links to the full text of journal articles when links are available. Access to some articles will be free. Access to others will require payment.

### LinkOut

- Links to full text resources from PubMed are available through a service called LinkOut.
- When you click on LinkOut icons, you leave PubMed and are directed to the full text at an external site.
- The National Library of Medicine does not hold the copyright to this material, and cannot give permission for its use. Users should review all copyright restrictions set forth by the full text provider before reproducing, redistributing, or making commercial use of material accessed through LinkOut.
- LinkOut provides links from PubMed and other Entrez databases to a wide variety of relevant web-accessible online resources including full-text publications.
- Look for icon links to full text resources on the Abstract display.
- Activate icons to link to your library subscriptions using My NCBI filters (see page 123)

*The icon links to full-text from the Abstract format.*

The screenshot shows a PubMed abstract page. At the top right, there are two LinkOut icons: 'Final Version FREE J Cell Biol' and 'FREE full text article in PubMed Central'. These icons are circled in red. Below the icons is a 'FIND IT @ HARVARD' button. The abstract title is 'Conservation of the centromere/kinetochore protein ZW10.' by Starr DA, Williams BC, Li Z, Etemad-Moghadam B, Dawe RK, Goldberg ML. The abstract text describes mutations in the Drosophila melanogaster gene zw10 and the role of ZW10 protein in chromosome segregation. On the right side, there are sections for 'Related articles' and 'Cited by 20 PubMed Central articles'.

Display Settings: ☒ Abstract      Send to: ☐

J Cell Biol. 1997 Sep 22;138(6):1289-301.

**Conservation of the centromere/kinetochore protein ZW10.**  
 Starr DA, Williams BC, Li Z, Etemad-Moghadam B, Dawe RK, Goldberg ML.  
 Section of Genetics and Development, Cornell University, Ithaca, New York 14853-2703, USA.

Mutations in the essential *Drosophila melanogaster* gene *zw10* disrupt chromosome segregation, producing chromosomes that lag at the metaphase plate during anaphase of mitosis and both meiotic divisions. Recent evidence suggests that the product of this gene, DmZW10, acts at the kinetochore as part of a tension-sensing checkpoint at anaphase onset. DmZW10 displays an intriguing cell cycle-dependent intracellular distribution, apparently moving from the centromere/kinetochore at prometaphase to kinetochore microtubules at metaphase, and back to the centromere/kinetochore at anaphase (Williams, B.C., M. Gatti, and M.L. Goldberg. 1996. J. Cell Biol. 134:1127-1140). We have identified ZW10-related proteins from widely diverse species with divergent centromere structures, including several *Drosophilids*, *Caenorhabditis elegans*, *Arabidopsis thaliana*, *Mus musculus*, and humans. Antibodies against the human ZW10 protein display a cell cycle-dependent staining pattern in HeLa cells strikingly similar to that previously observed for DmZW10 in dividing *Drosophila* cells. Injections of *C. elegans* ZW10 antisense RNA phenocopies important aspects of the mutant phenotype in *Drosophila*: these include a strong decrease in brood size, suggesting defects in meiosis or germline mitosis, a high percentage of lethality among the embryos that are produced, and the appearance of chromatin bridges at anaphase. These results indicate that at least some aspects of the functional role of the ZW10 protein in ensuring proper chromosome segregation are conserved across large evolutionary distances.

PMID: 9298984 [PubMed - indexed for MEDLINE]      PMCID: 2132553

**Related articles**

- ▶ Bipolar spindle attachments affect redistributions of ZW10, a Dr [J Cell Biol. 1996]
- ▶ ZW10 helps recruit dyactin and dynein to the kinetochore. [J Cell Biol. 1998]
- ▶ Determinants of *Drosophila* *zw10* protein localization and function. [J Cell Sci. 1994]
- ▶ **Review** The formation, structure, and composition of the mamm [Int Rev Cytol. 1982]
- ▶ **Review** Functional morphology of the kinetochore. [Int Rev Cytol Suppl. 1977]

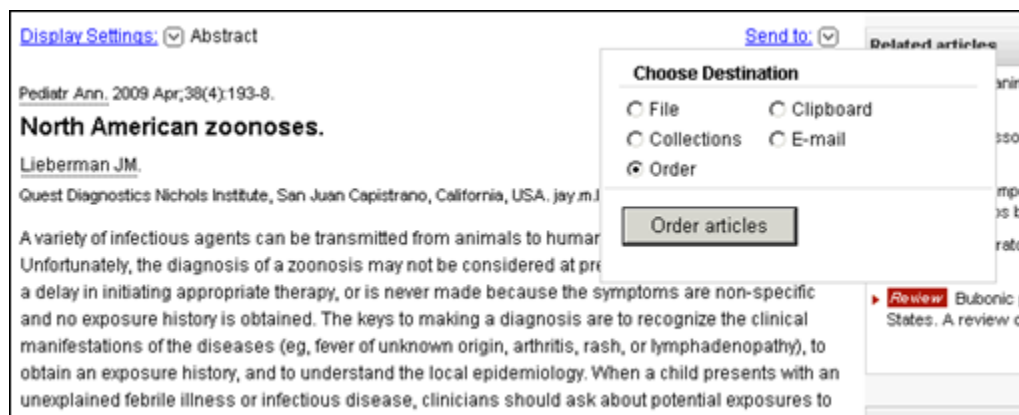
> See reviews... | > See all...

**Cited by 20 PubMed Central articles**

- ▶ SPDL-1 functions as a kinetochore receptor for MDF-1 in *Caenorhabditis* [J Cell Biol. 2008]
- ▶ Stable hZW10 kinetochore residency, mediated by hZwint-1 interact [J Cell Biol. 2008]
- ▶ Rab6 regulates both ZW10/RINT-1 and conserved oligomeric Gol [Mol Biol Cell. 2007]

> See all...

## Send to Order



- Select **Order** from the Send to menu (from any results screen or the Clipboard) to use an automated document ordering program called **Loansome Doc**.

### What is Loansome Doc?

The Loansome Doc feature allows you to order the full-text of an article from a Loansome Doc participating library. Prior to using this feature, you need to establish an agreement with a Loansome Doc participating library. Your Loansome Doc library will provide you with their **Library ID**, which is needed when setting up the service within PubMed or the NLM Gateway.

### What does it cost?

The library providing you this service will explain their ordering fees, if any. This service is generally **not** free.

### What library can provide me with this kind of service?

Call your Regional Medical Library at **1-800-338-7657** Monday-Friday, 8:30 A.M. – 5:00 P.M. in all time zones to find out which medical library in your area can set you up with the Loansome Doc ordering service. Or visit [http://www.nlm.nih.gov/pubs/factsheets/loansome\\_doc.html](http://www.nlm.nih.gov/pubs/factsheets/loansome_doc.html) to find out more about Loansome Doc.

To order articles, select the citations for the articles by clicking on the check-box to the left of each item.

- Select **Order** from the **Send to** menu.
- You are brought to the page shown below:

The screenshot shows the LoansomeDoc website. At the top, there is a header for the National Library of Medicine (NLM) with its logo. The main content area has a blue background with the LoansomeDoc logo and the tagline "Order biomedical literature from libraries." Below this, a message says "Please log in to complete your PubMed or Gateway request." There are input fields for "Email Address:" and "Password:" followed by a "Login" button. A link for "Forgot Password?" is also present. Below the login section, it asks "Don't have a Loansome Doc account?" and provides a "Sign up!" link. On the right side, there is a sidebar with a search bar and links for "Search MEDLINE/PubMed", "Search NLM Gateway", and "Frequently Asked Questions". Below this, there is a section titled "What You Can Do:" with links for "Order documents", "Check order status", and "Update account information", followed by a "Learn More >>" link. At the bottom, there is a footer with copyright information, privacy, and accessibility links, and the date 9/24/2009.

On this page you can:

- log into Loansome Doc using your Email address
- obtain a status report of your orders
- update your Loansome Doc account information
- sign up for a Loansome Doc account
- link to FAQs
- learn more about Loansome Doc

For more information about obtaining full text articles, see the tri-fold handout, *Full Text and PubMed* at <http://nmlm.gov/training/resources/fulltexttri.pdf>.

**NOTES**

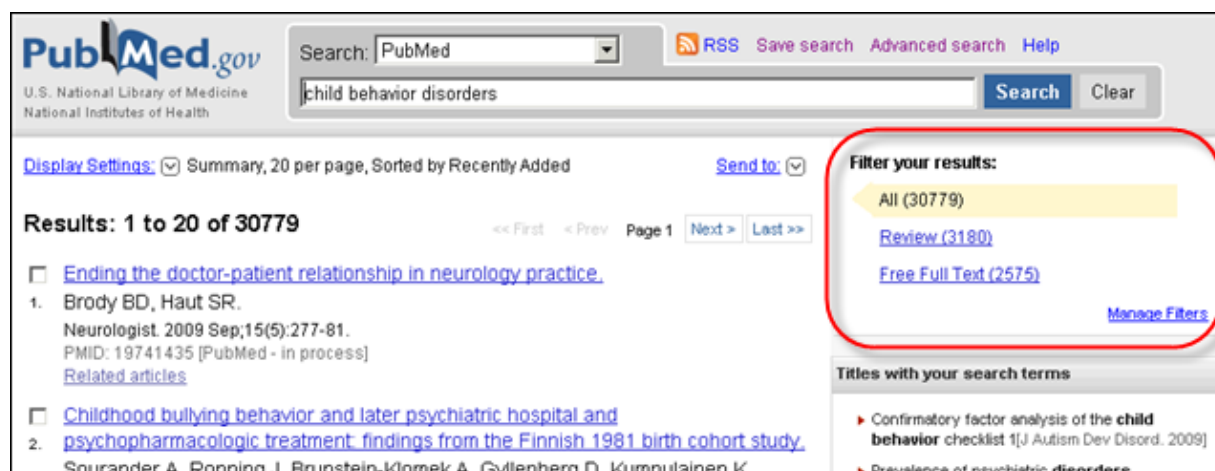
## Additional Tools

### Filters

- My NCBI includes a Filters feature which groups search results by areas of interest.
- Filters are available from the right hand column of your search results
- You can have up to **five** active filters using My NCBI.

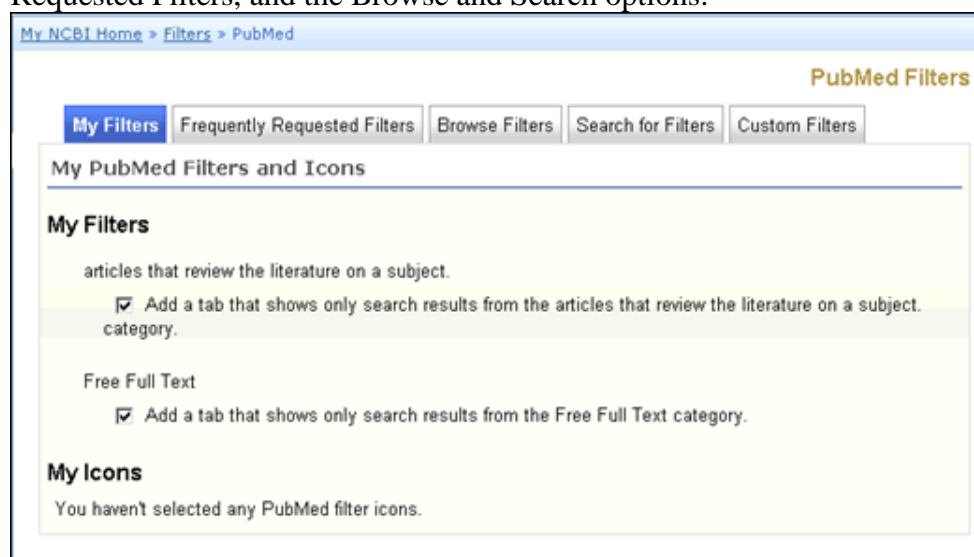
### Default Filters

- “All” shows the total retrieval for the search. “Review” shows the total retrieval for review articles. “Free full text” shows those citations that link without charge to the full text.



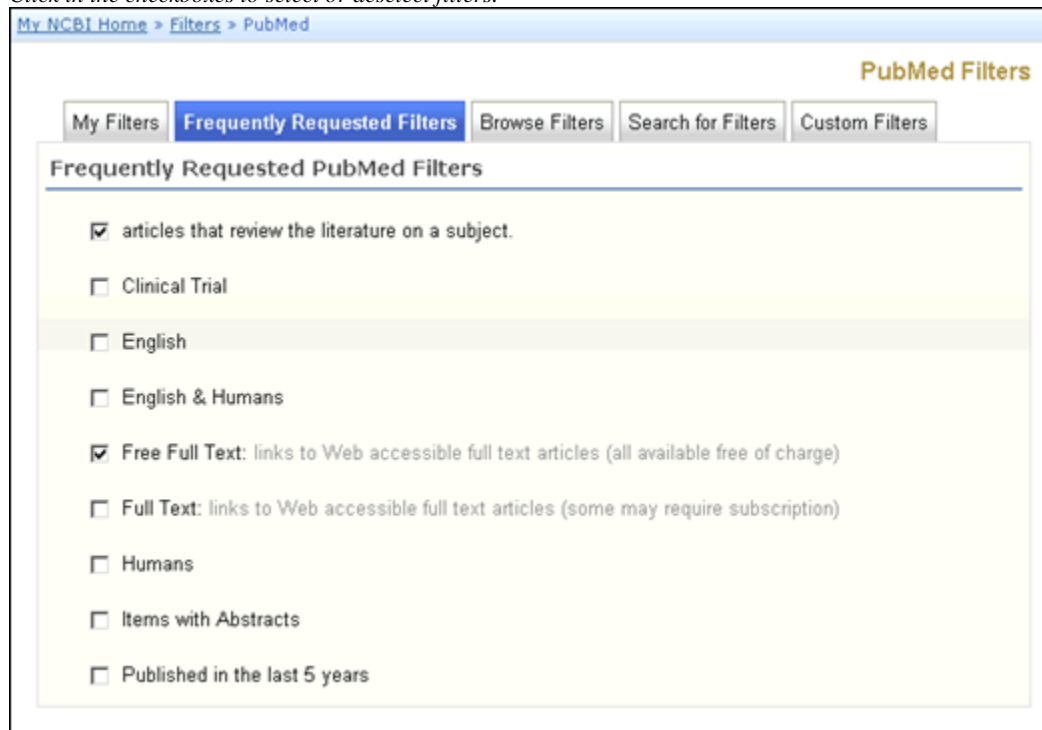
### Adding Filters

- Use the **Manage Filters** link to the **My PubMed Filters** menu (you must sign in to My NCBI if not already signed in)
- This page displays the filters currently applied to PubMed, and provides links to the Frequently Requested Filters, and the Browse and Search options:



- Click on **Frequently Requested Filters** to add common filters to your display:

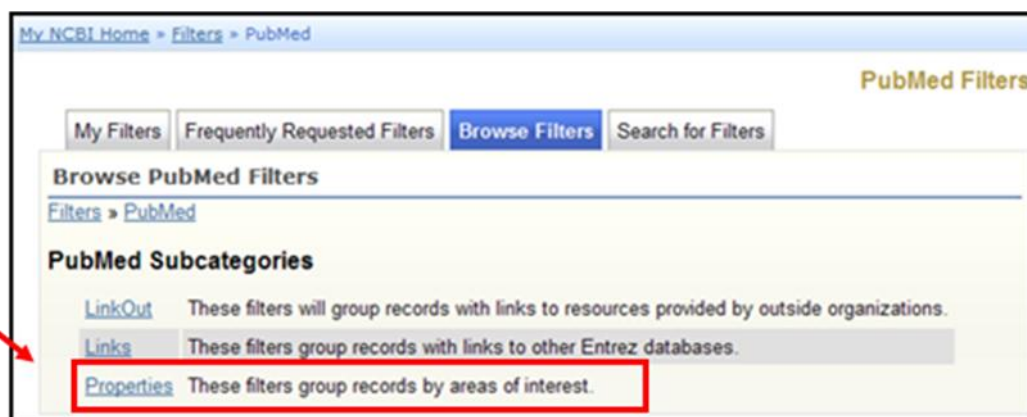
*Click in the checkboxes to select or deselect filters.*



## Browse

- Click on Browse to see additional options for PubMed filters.
- On the Browse page there are three categories:
  - LinkOut
  - Links
  - Properties
- Users interested in **subject-related filters** for their searches should look at **Properties**.

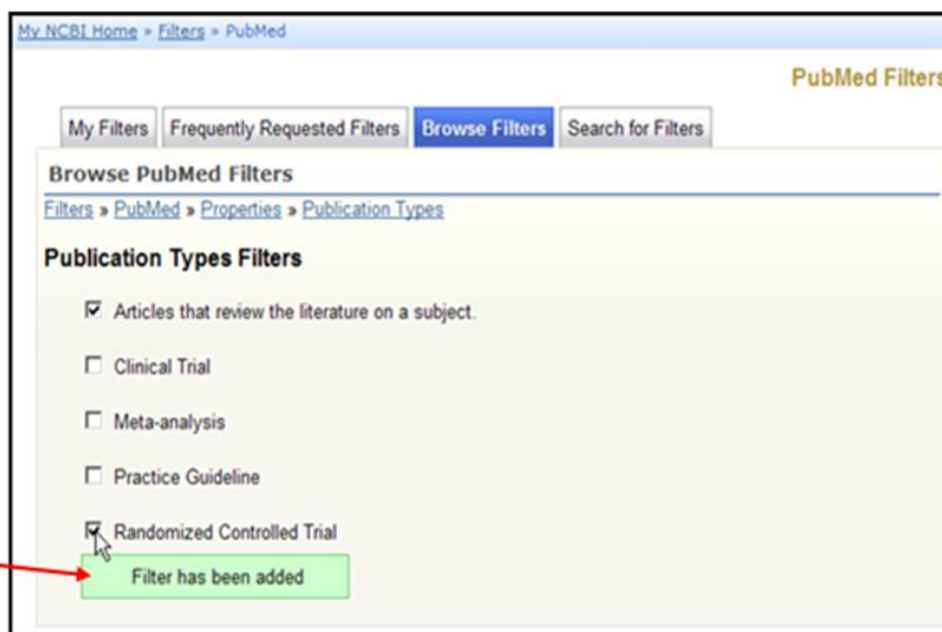
*There are over 70 filter options under Properties.*



Under Properties, use the links to see the available filters for each sub-category. Here's the one for Publication Types:

Click in the checkbox to select the filter.

A confirmation message will display.



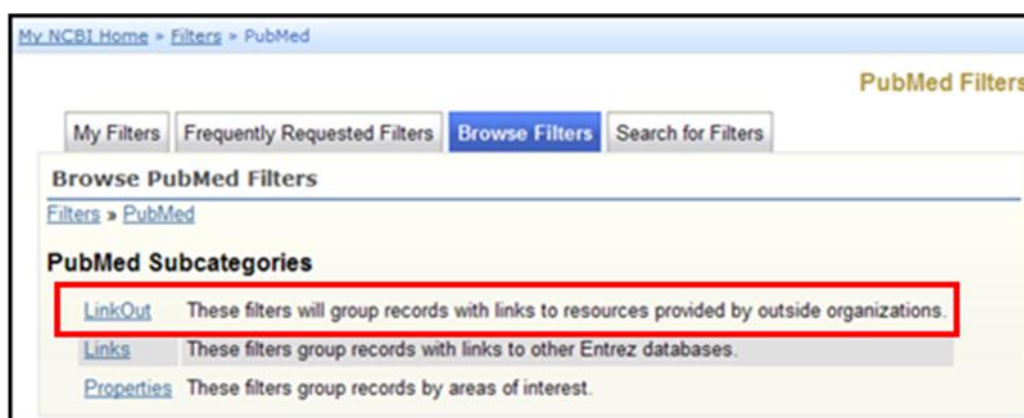
## LinkOut Filters

- Filters in this category group results by full text providers, libraries, and other outside resources.

## Adding your library's holdings as a filter

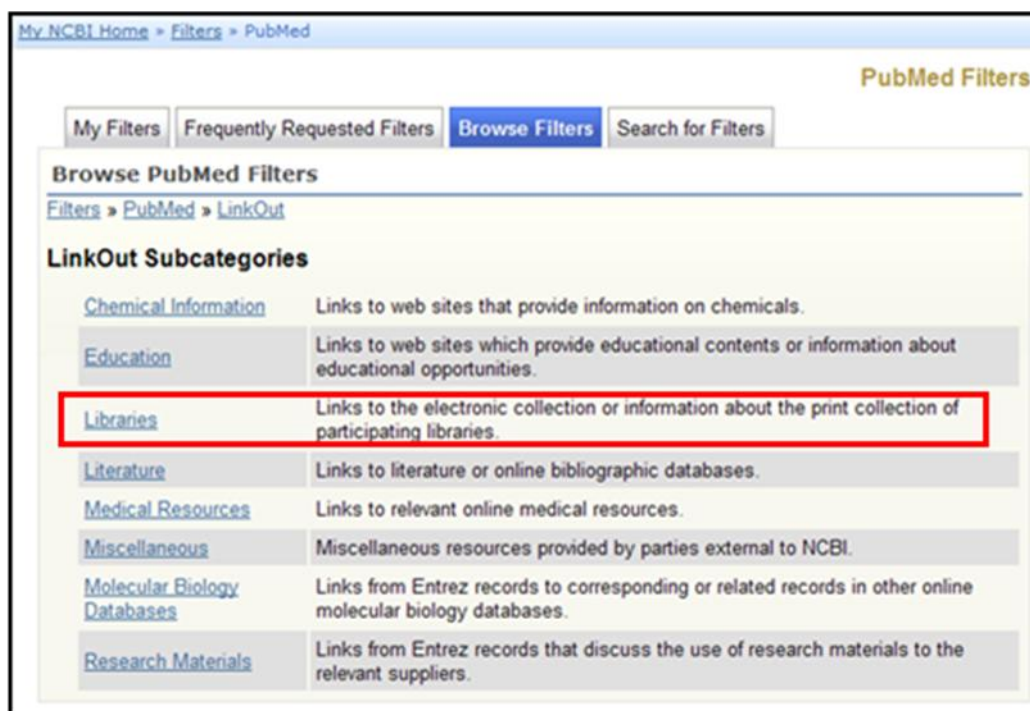
- From the PubMed "Browse" filters page:

Click on **LinkOut**





Click on  
**Libraries**



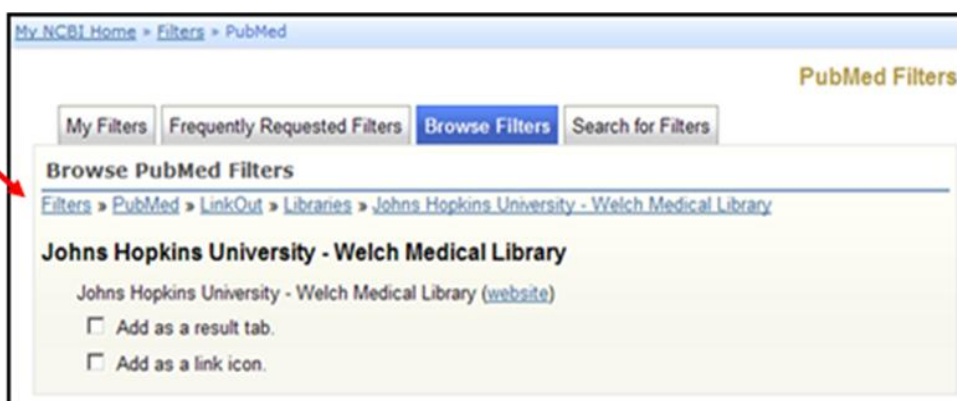
This will bring up a page with all of the LinkOut-participating libraries.

- Use your browser's Find feature to locate your library.
- Click on the desired library link.
- Then click on the checkboxes to add a result tab and/or display the library's icon:

Notice the use of  
"breadcrumbs" on  
the Filters pages.

Each breadcrumb  
for a higher level is  
a link to that page.

Click in the  
checkboxes to add  
these selections.

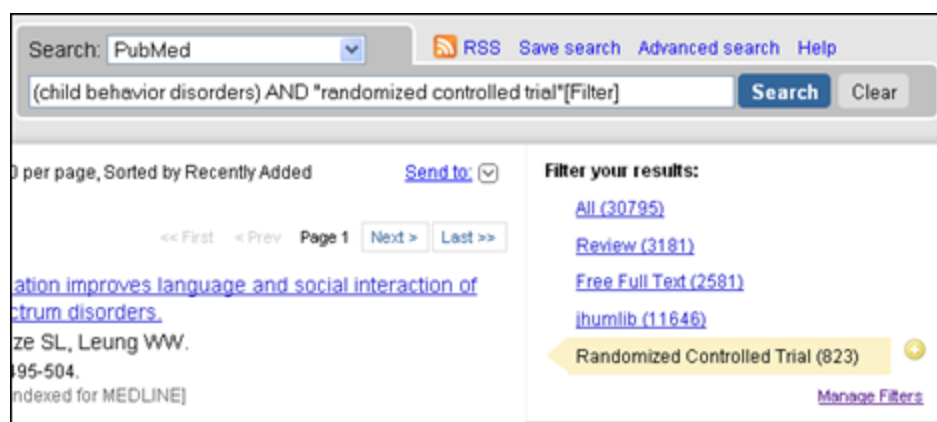


- Filter links for LinkOut providers display the LinkOut user name.
- Place your cursor over this ID to see the name of the provider.
- Users who connect to PubMed with a URL that includes a library's holdings parameter will continue to see their library icon even if they do not select their library in My NCBI. Users should select their library filter if they want to see a filter link for their library in the search results.



## Using the Filter Links

- Click on a filter name to go to the citations for a particular filter. Select any display format you wish.
- When you click on the filter name to see the results for a filter, a (+) symbol will appear in the menu:



*Clicking on the + icon adds that filter to the search box.*



- Filters added using the (+) icon will display in the search box with the [Filter] tag.
- If you want to save this search, click on Save Search.
- Many filter topics can be added to the search via the Limits page. Either way will yield the same results.

## My NCBI User Preferences

- Available from My NCBI sidebar.
- Save an e-mail address for Send to E-mail as well as automatic e-mail updates.
- Choose to highlight PubMed search words in retrieval when you are signed into My NCBI.
- Choose to expand the supplemental data in the Abstract display by default.
- Set your document delivery and/or Outside Tool preferences.
- Choose to turn off the Auto Suggest feature, which displays suggested searches as you type in the PubMed search box.
- Choose to turn off the Search Details feature, which shows how PubMed translated your search.

<a href="#">Table of Contents</a> <a href="#">My NCBI Home</a> <a href="#">My Saved Data</a> <a href="#">Search Filters</a> <b><a href="#">Preferences</a></b> <a href="#">About My NCBI</a>	<a href="#">My NCBI Home</a> » <a href="#">Preferences</a>																												
	<div style="text-align: right;"><b>Preferences</b></div> <div> <b>Common Preferences</b> <table border="1"> <tr><td><a href="#">Username</a></td><td>drpeabody</td></tr> <tr><td><a href="#">Password</a></td><td>*****</td></tr> <tr><td><a href="#">E-mail Address</a></td><td>doctorpeabody@gmail.com (confirmed)</td></tr> <tr><td><a href="#">Links Display</a></td><td>Popup Menu</td></tr> <tr><td><a href="#">Highlighting</a></td><td>No Highlight</td></tr> <tr><td><a href="#">Shared Settings</a></td><td>None</td></tr> <tr><td><a href="#">Linked Accounts</a></td><td>None</td></tr> </table> </div> <div> <b>PubMed Preferences</b> <table border="1"> <tr><td><a href="#">Abstract Supplemental Data</a></td><td>Closed</td></tr> <tr><td><a href="#">Document Delivery</a></td><td>None Selected</td></tr> <tr><td><a href="#">PubMed Filters &amp; Icons</a></td><td>articles that review the literature on a subject. , Free Full Text</td></tr> <tr><td><a href="#">Outside Tool</a></td><td>None Selected</td></tr> <tr><td><a href="#">Auto Suggest</a></td><td>On</td></tr> <tr><td><a href="#">Search Details</a></td><td>On</td></tr> </table> </div> <div> <b>SNP Preferences</b> <table border="1"> <tr><td><a href="#">Outside Tool</a></td><td>None Selected</td></tr> </table> </div>	<a href="#">Username</a>	drpeabody	<a href="#">Password</a>	*****	<a href="#">E-mail Address</a>	doctorpeabody@gmail.com (confirmed)	<a href="#">Links Display</a>	Popup Menu	<a href="#">Highlighting</a>	No Highlight	<a href="#">Shared Settings</a>	None	<a href="#">Linked Accounts</a>	None	<a href="#">Abstract Supplemental Data</a>	Closed	<a href="#">Document Delivery</a>	None Selected	<a href="#">PubMed Filters &amp; Icons</a>	articles that review the literature on a subject. , Free Full Text	<a href="#">Outside Tool</a>	None Selected	<a href="#">Auto Suggest</a>	On	<a href="#">Search Details</a>	On	<a href="#">Outside Tool</a>	None Selected
<a href="#">Username</a>	drpeabody																												
<a href="#">Password</a>	*****																												
<a href="#">E-mail Address</a>	doctorpeabody@gmail.com (confirmed)																												
<a href="#">Links Display</a>	Popup Menu																												
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<a href="#">Shared Settings</a>	None																												
<a href="#">Linked Accounts</a>	None																												
<a href="#">Abstract Supplemental Data</a>	Closed																												
<a href="#">Document Delivery</a>	None Selected																												
<a href="#">PubMed Filters &amp; Icons</a>	articles that review the literature on a subject. , Free Full Text																												
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See demos on various My NCBI features. Click on PubMed Tutorials under More Resources from the PubMed homepage or go directly to:  
<http://www.nlm.nih.gov/bsd/disted/myncbi.html>

## Clinical Queries

- Available on PubMed homepage; also available from the bottom of the Advanced Search screen
- There are 3 search filters available from this page:
  - Search by Clinical Study Category
  - Find Systematic Reviews
  - Medical Genetics Searches

### Search by Clinical Study Category

- This specialized search query is intended for clinicians and has built-in search "filters" based on research done by R. Brian Haynes, M.D., Ph.D. at McMaster University in Canada.

Five study categories or filters are provided:

- etiology
- diagnosis
- therapy
- prognosis
- clinical prediction guidelines

Two emphasis categories or filters are provided:

- narrow, specific search -- will get more precise, relevant citations but less retrieval
- broad, sensitive search -- includes relevant citations but probably some less relevant; will get more retrieval

**Example:** Find citations on having a rash with a fever using the defaults of therapy and narrow, specific search.

### Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input checked="" type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

## Find Systematic Reviews

- This feature is provided to help clinicians locate systematic reviews and similar articles.
- It retrieves systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines. Citations from journals specializing in clinical review studies are also included.

**Example:** *Find Systematic Reviews on inhalation therapy for pneumonia.*

Enter search terms in the search box

**Find Systematic Reviews**
↑

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see [Help](#). See also [related sources](#) for systematic review searching.

Search



This subset can be combined directly with other search terms using AND systematic [sb]. For example, lyme disease AND systematic [sb].

Alternatively, you may select Systematic Reviews from the Subset pull-down menu on the Limits screen.

## Medical Genetics Searches

- Finds citations related to various topics in medical genetics.
- Default is to **All** topics. Click on All check box to deselect; then click on topic(s) of interest.
- Developed in conjunction with the staff of GeneReviews: Genetic Disease Online Reviews at GeneTests, University of Washington, Seattle.

**Example:** *Find citations about sickle cell anemia using the Medical Genetics Searches categories: Genetic Counseling; Genetic Testing*

Enter search terms in the search box.

Select topics of interest.

**Medical Genetics Searches**
↑

This search finds citations and abstracts related to various topics in medical genetics. See the [filter table](#) for details.

Search

Category

☐ All  
☐ Diagnosis  
☐ Differential Diagnosis  
☐ Clinical Description  
☐ Management  
☒ Genetic Counseling  
☐ Molecular Genetics  
☒ Genetic Testing

## Special Queries – Health Services Research (HSR) Queries

### Why?

- Provides a search interface to find PubMed citations relating to **health care quality** and health care costs

### Where?

- Click on **Topic-Specific Queries** from PubMed homepage; or click on the link from bottom of the Advanced Search screen
- Click on **Health Services Research (HSR) Queries** from the Special Queries page

Click on “[definitions](#)” to display helpful explanations of the HSR categories.

Enter search terms here.

Choose appropriate category and scope.

### PubMed Health Services Research (HSR) Queries

This page provides specialized PubMed searches on healthcare quality and costs.

After running one of these searches, you may further refine your results using PubMed's [Limits](#) feature.

Results of searches on this page are limited to specific health services research areas (see [definitions](#)). For comprehensive searches, use [PubMed](#) directly.

Additional PubMed search filters are available, including a filter for [Systematic Reviews](#).

#### Search by HSR Study Category

This search finds citations that correspond to a specific health services research study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

#### Category

- ☐ Appropriateness
- ☐ Process assessment
- ☐ Outcomes assessment
- ☒ Costs
- ☐ Economics
- ☐ Qualitative research

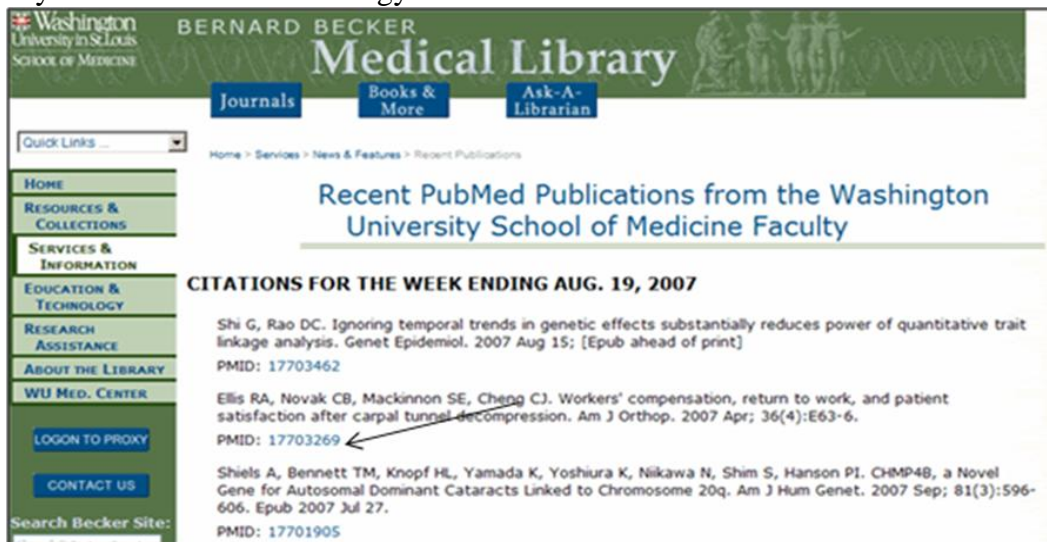
#### Scope

- ☐ Broad, sensitive search
- ☒ Narrow, specific search

## Linking to PubMed

### Creating Links to PubMed Citations and Searches

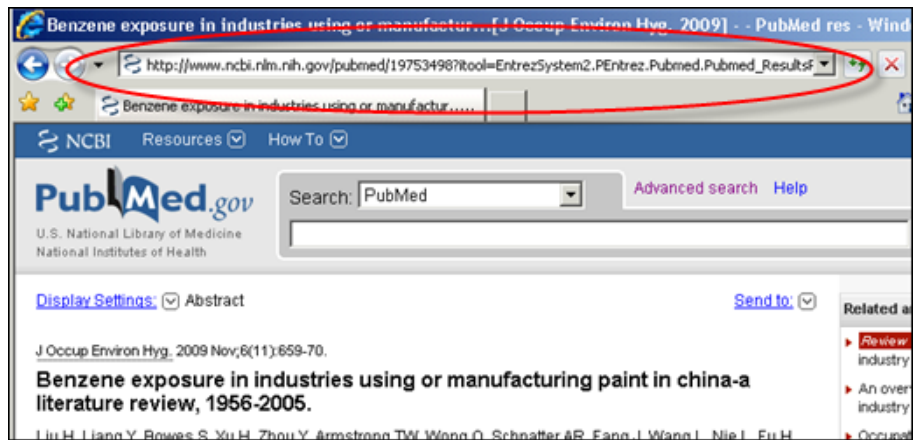
To create a link to PubMed citations for use in a bookmark, Web page, or e-mail message, create or generate a customized URL. With this URL, you can link to specific citations or link to the current results of your PubMed search strategy.



Recent publications from the [Washington University School of Medicine faculty](#) (Bernard Becker Medical Library). The PMID number links to the citation in PubMed in Abstract format.

### To create a link to a single citation in PubMed:

1. View the citation in the Summary format
2. Click the title link to display the Abstract format
3. Bookmark this page, or copy the URL from the browser's address bar to paste as a link in a Web page or e-mail message



Copy the URL from the address bar when viewing a single citation in the Abstract display.

## To create a customized link to one or more citations in your preferred format:

Use the base URL for PubMed:

<http://www.ncbi.nlm.nih.gov/pubmed/>

then add the PMID.

For multiple PMIDs, use commas (but no spaces) between each number, as follows:

18235850,17701905

Add **?&report=** followed by your preferred display format (docsum, brief, abstract, medline, xml, – see PubMed Help at

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.table.pubmedhelp.T40> for descriptions), as follows:

**?&report=abstract**

Strung together, your URL now looks like:

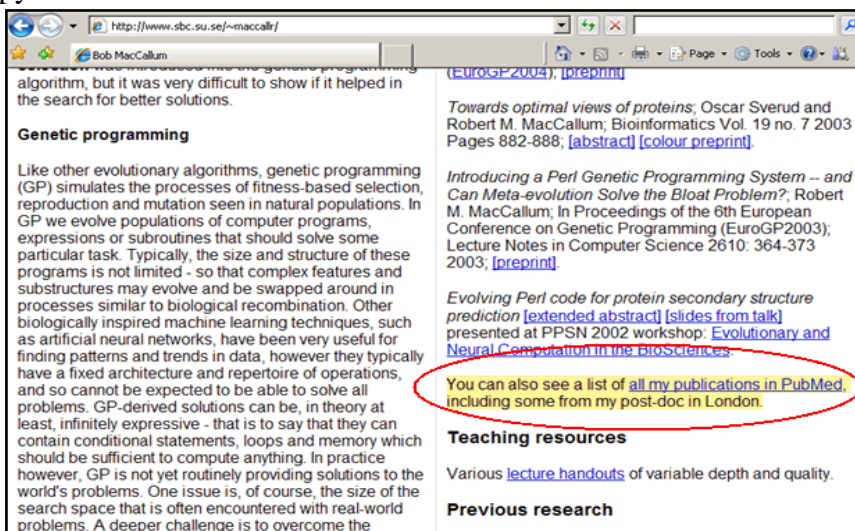
<http://www.ncbi.nlm.nih.gov/pubmed/18235850,17701905?&report=abstract>

Note that there are no spaces.

## To create a link to the results for a short PubMed search (e.g., an author's name):

1. Run the search
2. Click on the Advanced Search link
3. Go to Details
4. Click on the URL button, below the search details
5. Bookmark this page, or copy the URL from the browser's address bar

A personal home page with a link that runs a search for the author's citations in PubMed.





Click on the URL button on the Details page to create a link to a PubMed search.

**Search Details**

**Query Translation:**

mccallum rm[Author]

**Search** **URL**

**Result:**

18

**Translations:**

mccallum rm      mccallum rm[Author]

**Database:**

PubMed

**User query:**

mccallum rm

Note: Some browsers have a size limit for URLs in the address bar. If your link doesn't work, the search string may be too long for your browser. Use the "customized link" method, described below.

### To create a customized link to PubMed search results:

A customized search link allows you to select the display format and number of citations in the PubMed results page.

Use the base URL for a PubMed "search" function:

<http://www.ncbi.nlm.nih.gov/pubmed?term=>

Add your search terms. Use the "+" sign between terms instead of spaces, as follows:

gastrointestinal+stromal+tumors

To use specific search fields, use the field tag (see Search Field Descriptions and Tags [http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search\\_Field\\_Description](http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search_Field_Description)). For example, to limit the above search to articles published in the last ten years, use the [dp] tag, as follows:

+AND+"last+10+years"[dp]

Optionally, add **&report=** followed by your preferred display format (docsum, brief, abstract, medline, xml), as follows:

**&report=abstract**

Add **&dispmax=** followed by the number of items to display on each page, as follows:

**&dispmax=100**

Your finished URL will look like:

`http://www.ncbi.nlm.nih.gov/pubmed?term=gastrointestinal+stromal+tumors+AND+"last+10+years"[dp]&report=abstract&dispmax=100`

Note that there are “&” symbols between each element, and there are no spaces.

### Troubleshooting:

If your URL isn't working, the special characters may not be interpreted properly by PubMed. Try the following substitutions:

- Use **&amp;** instead of **&**
- Use **%20** instead of **+**
- Use **%5B** instead of **[**
- Use **%5D** instead of **]**
- Use **%22** instead of **“**

For more details on creating links to PubMed or other Entrez databases, see Creating a Web Link to the Entrez Databases at <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helplinks.chapter.linkshelp>

## E-Utilities

- E-Utilities provide access to Entrez data outside of the regular web query interface.

Why use E-Utilities?

- E-Utilities are useful for retrieving large sets of PMIDs or records, or counts of records, matching a search strategy.



There are specific instructions and requirements for using E-Utilities in order to manage the workload on NCBI servers. See the E-Utilities documentation on the PubMed home page. You may consider asking your institution's IT staff for technical support.

## Review Exercises

Choose one or two of the below case studies to review what you've learned about PubMed. Use My NCBI Save Search and Collections features to save your work.

1. Emergency department physicians are concerned about the number of patients who leave the department without being seen (usually because they feel they have waited too long). Find articles about this phenomena using PubMed.
2. Locate information on the Pelizaeus-Merzbacher Disease. Please search back to 1988. Do the Clinical Queries help you find information on etiology?
3. What are the economic effects of breast cancer on a community? Consider using MeSH subheadings and/or the Health Services Research (HSR) Queries (follow the link to Topic-Specific Queries on the PubMed homepage or Advanced Search page).
4. Find the latest review articles on Edwards Syndrome.
5. A woman presents with dementia and the neuropathological findings suggest a prominent contribution by Cerebrovascular disease. Find information on diagnosis and treatment. Try the Clinical Queries, Search by Clinical Study Category.
6. Explore the ethical issues raised by the deaf community regarding cochlear implants. Consider using a subset, or looking specifically at audiology journals (see the broad subject term in the Journals Database).
7. Find systematic reviews for accidents caused by sleep deprivation.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

## Review Exercises: Suggested Answers

1. Emergency department physicians are concerned about the number of patients who leave the department without being seen (usually because they feel they have waited too long). Find articles about this phenomena using PubMed.

One approach:

emergency service, hospital AND patient dropouts AND time factors



The screenshot shows the PubMed.gov website interface. The search bar contains the query "emergency service, hospital AND patient dropouts AND time factors". The results are displayed in a list format, showing 17 results. The first four results are visible, each with a checkbox, a title, authors, journal information, and a PMID. Each result also has a link to "Related articles".

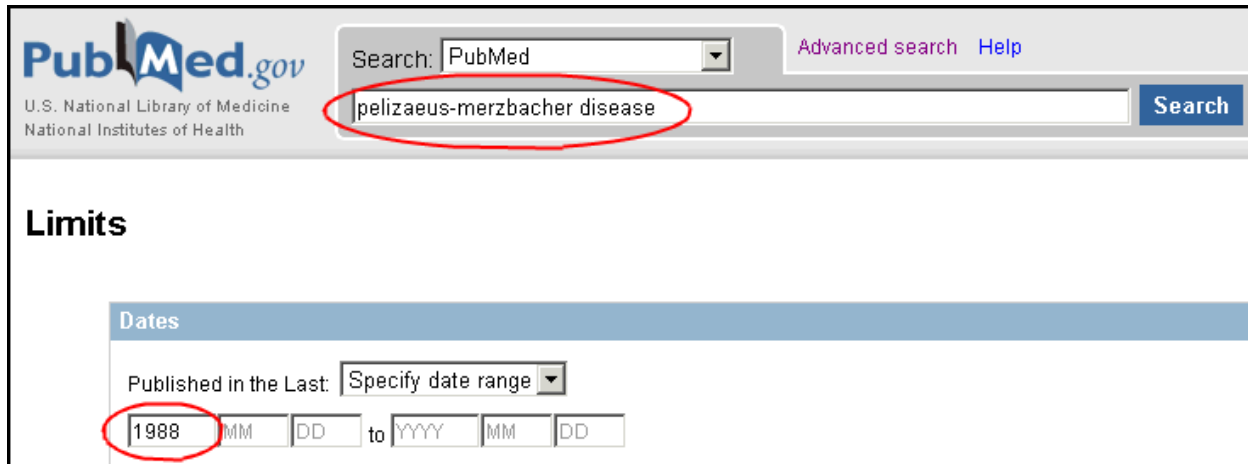
**Results: 17**

- ☐ ["Left without being seen": a national profile of children who leave the emergency department before evaluation.](#)  
1. Bourgeois FT, Shannon MW, Stack AM.  
Ann Emerg Med. 2008 Dec;52(6):599-605. Epub 2008 May 1.  
PMID: 18450328 [PubMed - indexed for MEDLINE]  
[Related articles](#)
- ☐ [A population follow-up study of patients who left an emergency department without being seen by a medical officer.](#)  
2. Mohsin M, Forero R, Ieraci S, Bauman AE, Young L, Santiano N.  
Emerg Med J. 2007 Mar;24(3):175-9.  
PMID: 17351221 [PubMed - indexed for MEDLINE]  
[Related articles](#)
- ☐ [Emergency department overcrowding: analysis of the factors of renege rate.](#)  
3. Asaro PV, Lewis LM, Boxerman SB.  
Acad Emerg Med. 2007 Feb;14(2):157-62. Epub 2006 Dec 20.  
PMID: 17185293 [PubMed - indexed for MEDLINE]  
[Related articles](#)
- ☐ [Patients who leave without being seen: their characteristics and history of emergency department use.](#)  
4. Ding R, McCarthy ML, Li G, Kirsch TD, Jung JJ, Kelen GD.  
Ann Emerg Med. 2006 Dec;48(6):686-93. Epub 2006 Jun 30.  
PMID: 17112932 [PubMed - indexed for MEDLINE]  
[Related articles](#)



Use natural language to begin your search and then review MeSH headings used to index relevant articles to determine patterns of indexing for pertinent articles.

2. Locate information on the Pelizaeus-Merzbacher Disease. Please search back to 1988. Do the Clinical Queries help you find information on etiology?



PubMed.gov  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed  
Advanced search Help

pelizaeus-merzbacher disease Search

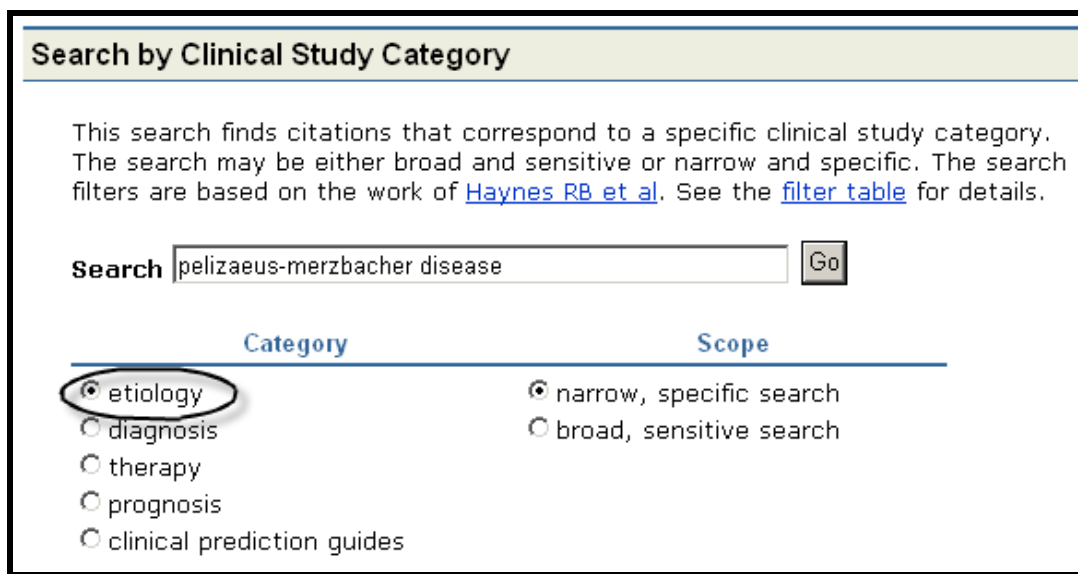
### Limits

#### Dates

Published in the Last: Specify date range

1988 MM DD to YYYY MM DD

Using Clinical Queries (Search by Clinical Study Category) to locate etiology information:



### Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search pelizaeus-merzbacher disease Go

Category	Scope
<input checked="" type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

3. What are the economic effects of breast cancer on a community? Consider using MeSH subheadings and/or the Health Services Research (HSR) Queries (follow the link to Topic-Specific Queries on the PubMed homepage).

Possible strategy using MeSH/subheadings:

**PubMed.gov**  
U.S. National Library of Medicine  
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

**breast neoplasms/ec AND (community health services OR community)** **Search**

---

**Search Details**

**Query Translation:**

```
"breast neoplasms/economics"[Mesh Terms] AND (("community health services"[MeSH Terms] OR ("community"[All Fields] AND "health"[All Fields] AND "services"[All Fields]) OR "community health services"[All Fields]) OR ("residence characteristics"[MeSH Terms] OR ("residence"[All Fields] AND "characteristics"[All Fields]) OR "residence characteristics"[All Fields] OR "community"[All Fields]))
```

**Search** **URL**

**Result:**  
[255](#)

**Translations:**

breast neoplasms/ec	"breast neoplasms/economics"[Mesh Terms]
community health services	"community health services"[MeSH Terms] OR ("community"[All Fields] AND "health"[All Fields] AND "services"[All Fields]) OR "community health services"[All Fields]
community	"residence characteristics"[MeSH Terms] OR ("residence"[All Fields] AND "characteristics"[All Fields]) OR "residence characteristics"[All Fields] OR "community"[All Fields]

**Database:**  
PubMed

**User query:**  
breast neoplasms/ec AND (community health services OR community)

Using Health Services Research Queries from the Special Queries page:

**Search by HSR Study Category**

This search finds citations that correspond to a specific health services research study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search  **Go** **Clear**

<b>Category</b>	<b>Scope</b>
<input type="radio"/> Appropriateness	<input type="radio"/> Broad, sensitive search
<input type="radio"/> Process assessment	<input checked="" type="radio"/> Narrow, specific search
<input type="radio"/> Outcomes assessment	
<input type="radio"/> Costs	
<input checked="" type="radio"/> Economics	
<input type="radio"/> Qualitative research	

4. Find review articles on Edwards Syndrome.
  - Search: “edwards syndrome” as a phrase so PubMed’s automatic term mapping does not break it apart.
  - Then review the citations and the MeSH headings used to index the citations to figure out what Edward Syndrome is. From that review, you should ascertain that Edwards Syndrome is a Trisomy, specifically Trisomy 18.
  - If you check the MeSH Database, you will find that Trisomy 18 is not a MeSH heading.
  - When you continue to review relevant citations, you will find the indexing pattern using the two MeSH Headings of Trisomy and Chromosomes, Human, Pair 18 for Edwards Syndrome.
  - Therefore, a recommended search strategy could be:

(trisomy [mh] AND chromosomes, Human, Pair 18 [mh])

- Click on the Review filter to view the Review articles subset of this retrieval.
5. A woman presents with dementia and the neuropathological findings suggest a prominent contribution by Cerebrovascular disease. Find information on diagnosis and treatment. Try the Clinical Queries, Search by Clinical Study Category.

Because you can only select one Clinical Study Category at a time, you must run 2 separate searches from the Clinical Queries page and then using the Advanced Search screen History feature combine those searches together for your final result. (Hint: There is a link to Clinical Queries at the bottom of the Advanced Search screen.)

Clinical Study Category search for the diagnosis focus:

**Search by Clinical Study Category**

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input checked="" type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

Clinical Study Category search for the treatment or “therapy” focus:

### Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input checked="" type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

Using the History function, combine the two separate searches using the Boolean connector OR:

U.S. National Library of Medicine  
National Institutes of Health

Search: **PubMed**
[Limits](#) [Details](#) [Help](#)

### Advanced Search

Search	Most Recent Queries	Time	Result
<a href="#">#14</a>	Search (dementia AND cerebrovascular disease) AND (Therapy/Narrow[filter])	14:34:41	<a href="#">289</a>
<a href="#">#13</a>	Search (dementia AND cerebrovascular disease) AND (Diagnosis/Narrow[filter])	14:34:11	<a href="#">282</a>

- Explore the ethical issues raised by the deaf community regarding cochlear implants. Consider using a subset, or looking specifically at audiology journals (use the broad subject term in the Journals Database).

Using the Bioethics Subset Limit via the Advanced Search screen:

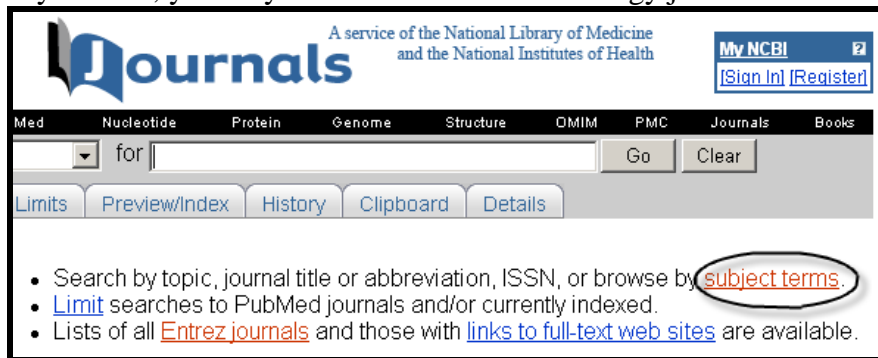
Search: **PubMed**

#### Subsets

Topics
☐ AIDS
☒ Bioethics
☐ Cancer
☐ Complementary Medicine



If you wish, you may limit this search to audiology journals:



**Journals**  
A service of the National Library of Medicine  
and the National Institutes of Health

My NCBI [Sign In] [Register]

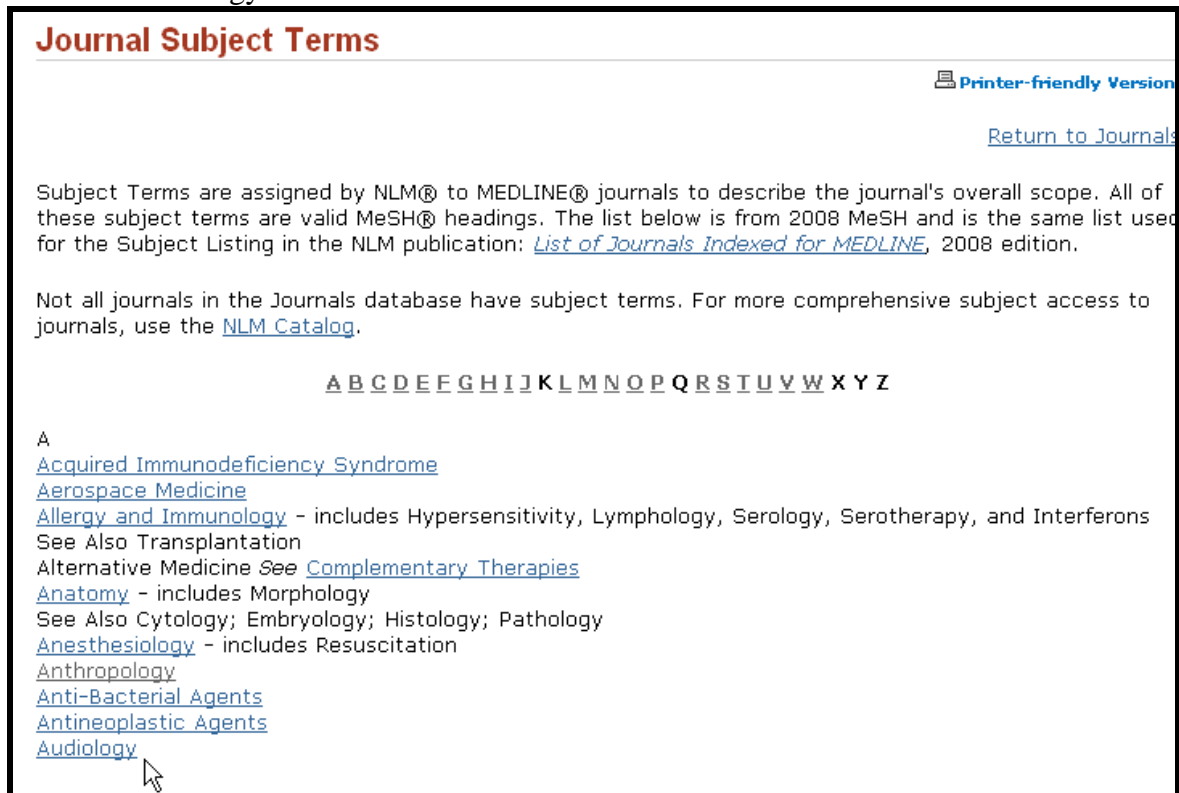
Med Nucleotide Protein Genome Structure OMIM PMC Journals Books

for [ ] Go Clear

Limits Preview/Index History Clipboard Details

- Search by topic, journal title or abbreviation, ISSN, or browse by **subject terms**.
- [Limit](#) searches to PubMed journals and/or currently indexed.
- Lists of all [Entrez journals](#) and those with [links to full-text web sites](#) are available.

Click on Audiology:



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Not all journals in the Journals database have subject terms. For more comprehensive subject access to journals, use the [NLM Catalog](#).

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**

**A**

[Acquired Immunodeficiency Syndrome](#)

[Aerospace Medicine](#)

[Allergy and Immunology](#) - includes Hypersensitivity, Lymphology, Serology, Serotherapy, and Interferons

See Also Transplantation

Alternative Medicine See [Complementary Therapies](#)

[Anatomy](#) - includes Morphology

See Also Cytology; Embryology; Histology; Pathology

[Anesthesiology](#) - includes Resuscitation

[Anthropology](#)

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Go to Limits and select currently indexed PubMed journals:

Journals A service of the U.S. National Library of Medicine and the National Institutes of Health

PubMed Nucleotide Protein Genome Structure OMIM PMC Journals

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Limit your search by any of the following criteria:

**Languages** CLEAR

☐ English  
☐ Chinese  
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Now select the Audiology journals of interest to you and select “Send to: Search Box with OR.”

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Suggestions: [Audiology](#), [Radiology](#), [Cardiology](#), [Angiology](#), [Sociology](#), [Autophagy](#), [Audubon](#), [Geobiology](#), [Austrian](#)

Display Summary Show 20 Sort By Send to

All: 36

Items 1 - 20 of 36

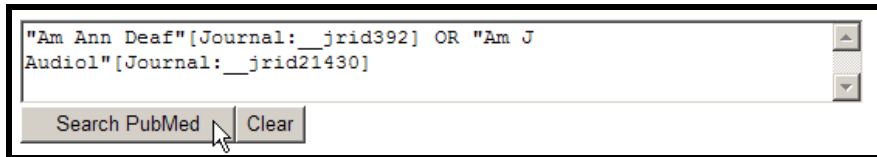
- Use the Links menu to retrieve records for that journal from a data [Matcher](#)
- Build a list of journals using the [Send to Search Box feature](#)

☒ 1: [American annals of the deaf](#) Links  
 pISSN: 0002-726X  
 Title Abbreviation: Am Ann Deaf  
 NLM ID: [0414670](#)

☒ 2: [American journal of audiology](#) Links  
 pISSN: 1059-0889  
 Title Abbreviation: Am J Audiol  
 NLM ID: [9114917](#)

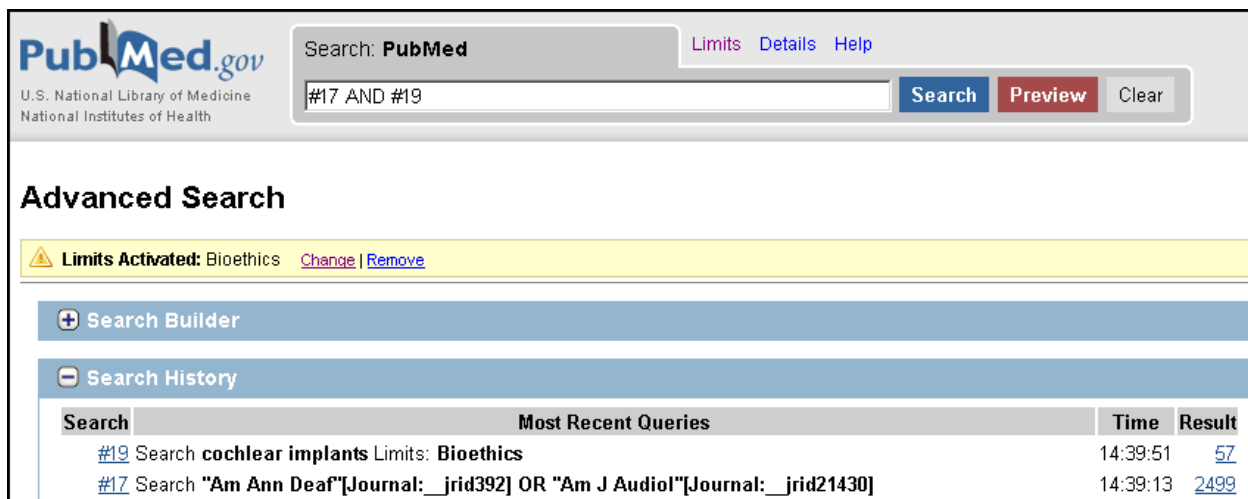
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Then click the Search PubMed button under the larger search box.




Alternatively, select **PubMed Links** from the Display pull-down – this option selects *all* the journal titles displayed and searches them in PubMed.

Now go to History and combine the two searches:



**Advanced Search**

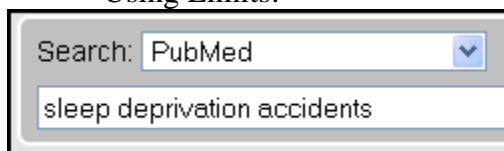
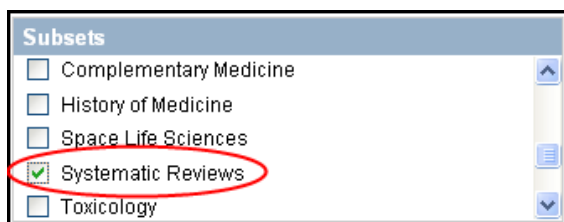
**Limits Activated:** Bioethics [Change](#) | [Remove](#)

**Search History**

Search	Most Recent Queries	Time	Result
#19	Search cochlear implants Limits: Bioethics	14:39:51	<a href="#">57</a>
#17	Search "Am Ann Deaf"[Journal:__jrid392] OR "Am J Audiol"[Journal:__jrid21430]	14:39:13	<a href="#">2499</a>

7. Find systematic reviews for accidents caused by sleep deprivation.

Using Limits:

**Subsets**

- ☐ Complementary Medicine
- ☐ History of Medicine
- ☐ Space Life Sciences
- ☒ Systematic Reviews
- ☐ Toxicology

**NOTES**